

Mar. 1996

No. 60100

JVC Service Manual

THREE CCD COLOR VIDEO CAMERA

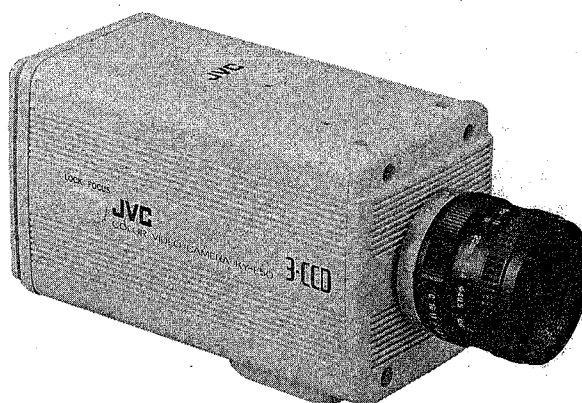
DREI CCD-FARBVIDEO KAMERA

CAMERA VIDEO COULEUR A TROIS CCD

**MODEL
MODELL
MODÈLE KY-F50**

VICTOR COMPANY OF JAPAN, LIMITED

JVC Service Manual



(Lens is optional.)

MODEL KY-F50

Thank you for purchasing the JVC KY-F50 Color Video Camera.

To make the most of your new camera's many advanced features, please read this booklet carefully.

JVC does not guarantee the contents of a recording if the color video camera, VCR, or video cassette malfunctions during recording.

CONTENTS

	Page
FEATURES	2
PRECAUTIONS	3
CONTROLS, CONNECTORS AND INDICATORS	5
PREPARATIONS	8
Mounting the lens	8
Mounting on a tripod stand, fixing unit or pan/tilt unit	9
CONNECTIONS	11
SETUP	13
Back focus adjustment	14
White balance adjustment	15
Full-time auto white balance	16
OPERATIONS	17
GENLOCKING OPERATION	26
CONNECTORS	28
TECHNICAL INFORMATION	29
ALC and EEI operations	29
Full-time auto white balance	30
Operation principle of the electronic shutter	30
High-resolution mode	31
Operation of the random trigger	31
Slow shutter function	32
SPECIFICATIONS	33

FEATURES

• Electronic shutter

Built-in shutter speeds available are 1/120, 1/250, 1/500, 1/1000, 1/2000 and EEI. With the optional remote control unit (RM-LP55), the V. SCAN function is also available.

• Automatic internal sync/external sync switching

The KY-F50 incorporates an automatic internal sync/external sync switching system which is especially useful when switching camera images in multi-camera systems or when upgrading the system.

• Built-in EBU color bars generator

EBU color bars signal can be generated.

FEATURES

• High-performance 3-CCD camera

Thanks to a newly developed 1/3-inch 440,000 pixel CCD with on-chip lens, the KY-F50 delivers a superb, high-quality picture with an S/N ratio of 58 dB and sensitivity as high as 2000 lux at F10. High-precision bonding technology and new circuitry incorporated in the CCD assure horizontal resolution of 700 lines.

• Compact, lightweight camera with C mount

Weighing a mere 870 grams, the KY-F50's remarkably compact, lightweight design has been made possible by the incorporation of a newly developed IC, 1/3-inch optical system, and bayonet mount.

• Comprehensive functions

- Automatic functions including ALC, EEI and FAW.
- Remote control signal input connector for the optional remote control unit (RM-LP55)

• Comprehensive signal outputs

- Composite video signal (D-SUB9-pin, BNC)
- Y/C443 signal (D-SUB9-pin)
- R/G/B signal (D-SUB9-pin)
- Component signal (D-SUB9-pin)
- Composite sync signal (D-SUB9-pin)

• Negative/positive function

For special applications such as a film shooting

• Dynamic shading compensation function

Compensates for uneven color caused by combining the lenses.

• High-resolution function

Enhances the vertical resolution.

2

PRECAUTIONS

■ Safety Precautions

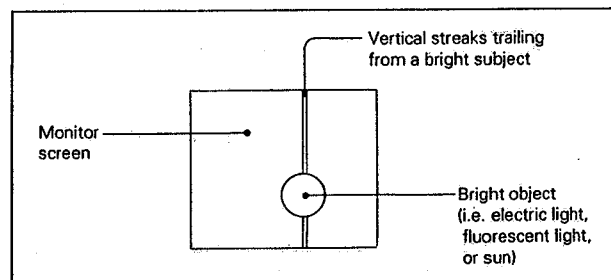
- To avoid malfunctions, keep flammable objects, water, and metal away from the unit's internal parts and circuitry.
- Improper connections may result in an unexpected malfunction, abnormal heat or fire.
- When there is any abnormality (abnormal noise, smell, smoke, etc.) with the unit, immediately turn the power off and contact your nearest JVC-authorized service agent.
- If anything unusual (abnormal noise, smell or smoke) occurs, immediately turn off the power and contact your nearest JVC dealer.

• CCD Smear and blooming

Due to the physical structure of the CCDs in this camera it is possible to induce vertical streaking or smear when shooting an extremely bright light source.

Another effect is the expansion of light around a bright light or object called Blooming.

Just as you protect your image against lens flare (internal lens reflections); please be careful when shooting a bright light source.



- **Moire or Aliasing**

Shooting stripes, checks, or other alternating patterns may cause jagged or banding in fine mesh patterns.

- **White dots**

White dots may appear on the screen when the camera is operated in a high-temperature environment.

- **Handling Precautions**

- **Do not use or store this camera in places subject to the following:**

- Strong vibrations.
- Exposure to excessive dust.
- Exposure to rain or water.
- Exposure to radioactive rays or X rays.

- **Ambient temperature**

Do not operate the camera outside a -5°C to $+40^{\circ}\text{C}$ (23°F to 104°F) temperature range.

- **Effects of strong electric waves or magnetism**

Strong electromagnetic waves or magnetism (for example, near a radio or TV transmission antenna, transformer or motor) can interfere with the image and generate spurious noise or color.

- **Supply voltage**

Make sure that the power is between 10.5 V and 15 V DC. If the power voltage is too low, abnormal color and increased noise could occur. Do not exceed 15 V DC in any case, or the unit could be damaged.

- **Effect on wireless microphones**

During shooting, this camera may interfere with operation of a wireless microphone and receiver. If used near the camera, the wireless receiver may pick up noise.

- **Cleaning the body**

Wipe body with a dry, soft cloth (such as cheesecloth).

When it is extremely dirty, soak the cloth in a solution of neutral detergent, wring it out and then wipe.

To prevent deformation of the body, etc. and to avoid operation hazards, do not allow volatile liquids such as benzene and thinner to touch the body.

If the equipment is soiled with water, oil, solvent, etc., wipe over with soft cloth or cotton first, then clean with gauze, etc. soaked in denatured alcohol.

- **Installation of the camera**

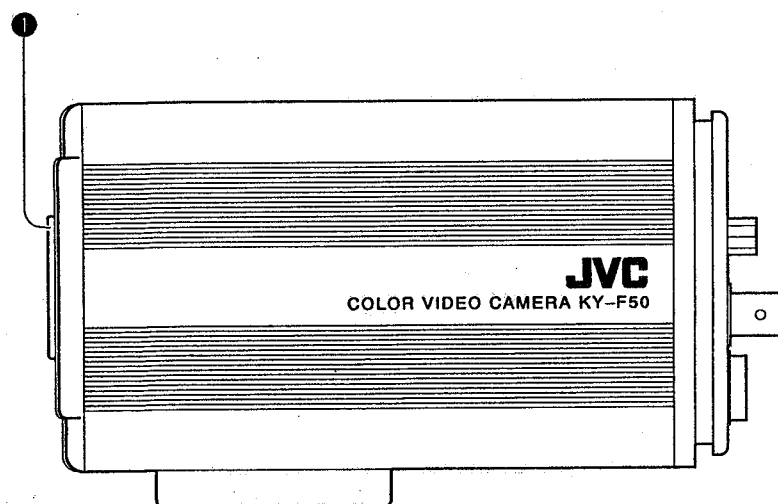
Be sure to set up the camera firmly and correctly.

- **Cleaning the optical system**

Clean the front and external lenses to prevent dust from adhering to them.

4

CONTROLS, CONNECTORS AND INDICATORS



1 Lens mount ring

Install the lens on the lens mount.

2 [RGB, Y/C, COMP OUT] D-SUB terminal

Outputs signals (RGB signals, Y/C443 signals, component signals) selected with the 3 select switch and video signals/sync signals.

3 [RGB, Y/C, COMP OUT] select switch

Selects the output signals from the 2 D-SUB terminal.

RGB : RGB signals are output.

Y/C : Y/C443 signals are output.

COMP : Component signals are output.

Note:

As for the output connectors, refer to page 28.

- ④ **[VIDEO OUT] composite video signal output connector**
Outputs composite video signals.

- ⑤ **[POWER, DC IN] power indication LED and DC input connector**

Connect to the AC adapter (optional AA-P700) with the provided cable. When power is supplied, the power indication LED will light.

- ⑥ **[TRIGGER] trigger connector**

Accepts input/output signals for random trigger and slow-shutter operation.

- ⑦ **[GENLOCK IN] external sync signal input connector**

Accepts an external reference signal to genlock the camera. Input composite video signals or black burst signals.

- ⑧ **[REMOTE] remote connector**

Connect the remote control unit (optional RM-LP55.)

Note:

When the remote control unit is used, it has priority over the main unit with all duplicated functions.

- ⑨ **[MENU] menu button**

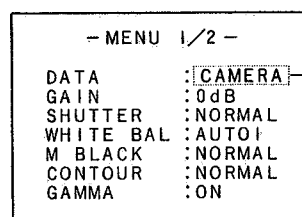
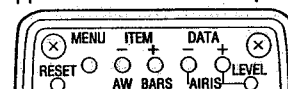
Activates or deactivates the MENU screen or changes the menu page.

→ MENU screen OFF → MENU screen 1/2 → MENU screen 2/2

[MENU operation]

- ① Press the MENU button to show MENU1/2 screen.
- ② Move the cursor to the item whose data you want to change with the ITEM (-) and (+) buttons. The item's data will blink.
- ③ Change the data with the DATA (-) and (+) buttons.
- ④ Repeat procedures ② and ③.
- ⑤ When all settings for MENU 1/2 are complete, press the MENU button. The MENU2/2 is shown.
- ⑥ Repeat procedures ② and ③ in the same way.
- ⑦ When all settings for MENU2/2 are complete, press the MENU button. MENU2/2 disappears, indicating that the MENU settings are complete.

(Upper section of the rear panel)

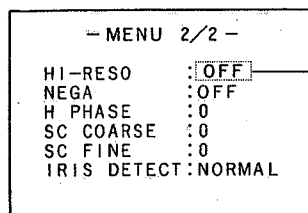


Example when DATA is selected

MENU screen 1/2

6

CONTROLS, CONNECTORS AND INDICATORS



Blinks

Example when HI-RESO is selected

MENU screen 2/2

[When the MENU screen is ON]

- ⑩ **[ITEM (+), ITEM (-)]**

Changes the items on the MENU screen.
With (+), you can choose the lower items.
With (-), you can choose the upper items.

- ⑪ **[DATA (+), DATA (-)]**

Changes the data for the selected item on the MENU screen.

[When the MENU screen is OFF]

- ⑩ and ⑪ buttons have different functions.

- ITEM (-) button → AUTO WHITE start button
When AUTO1 is selected for WHITE BALANCE, this button activates AUTO WHITE.
- ITEM (+) button → BARS button
This button switches video output signals between BAR and CAM.

- DATA (+), DATA (-) button → AUTO IRIS LEVEL adjustment

This button adjusts the AUTO IRIS level with ALC, ALC + EEI, EEI mode. When the level is off the reference value, the LEVEL LED is lit.

- ⑫ **[RESET] reset button**

When this button is pressed, all data for the MENU items is reset to the reference value.

Reset items and reference values

Items	Reference values	Items	Reference values
DATA	CAMERA	SC COARSE	0
GAIN	0 dB	SC FINE	0
SHUTTER	NORMAL	IRIS DETECT	NORMAL
WHITE BAL	AUTO1		
M BLACK	NORMAL	DY-SH MODE	NORMAL
CONTOUR	NORMAL	DY-SH(R, G, B)	0
GAMMA	ON		
HI-RESO	OFF		
NEGA	OFF	BARS	OFF
H PHASE	0	A IRIS LEVEL	NORMAL

- ⑬ **[LEVEL] auto iris level LED**

The LED is lit when the auto iris level is off the reference value.

PREPARATIONS

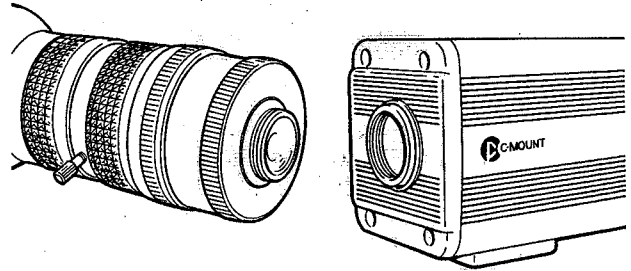
■ Mounting the lens

The KY-F50 is not provided with a lens.
The 2/3-inch, C mount lens is required.

1. Remove the cap from the lens mount. Be careful that no dust gets on the mount.
2. Insert the lens into the mount and turn it clockwise to install.

Notes:

- The lens's auto function cannot be controlled with this unit.
- Resolution decreases depending on the lens.
- The viewing angle may change if a 2/3-inch lens is not used.
- Certain lenses may cause ghosting, flaring and shading (color unevenness).
- Be sure the lens is securely attached; otherwise, the back focus adjustment cannot be properly performed.



8

PREPARATIONS

■ Mounting on a tripod stand, fixing unit or pan/tilt unit

[When mounting the bottom of the camera]

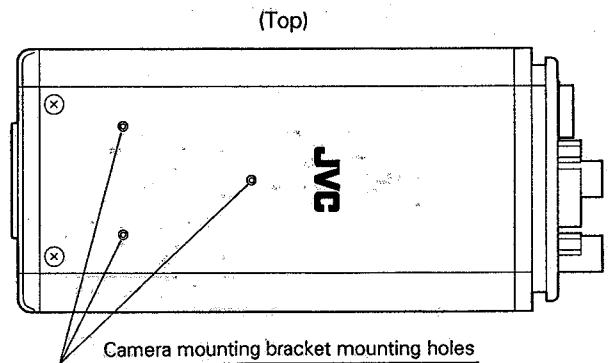
1. Install the camera using the camera mounting bracket on a tripod, stand, fixing unit or pan/tilt unit.

[When mounting the top of the camera]

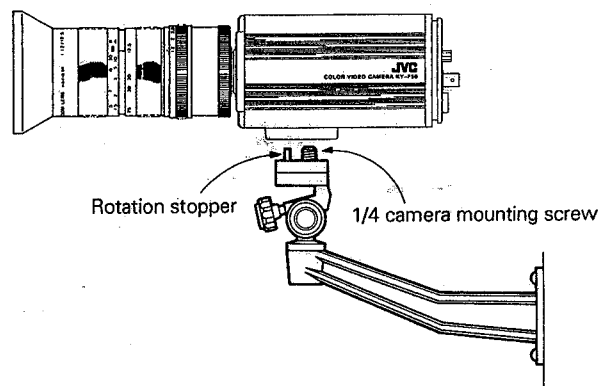
1. Remove the three camera mounting bracket screws on the bottom of the camera.
2. Secure the camera mounting bracket to the top of the camera with the three screws.
3. Install the camera using the camera mounting bracket on the tripod, stand, fixing unit or pan/tilt unit.

Note:

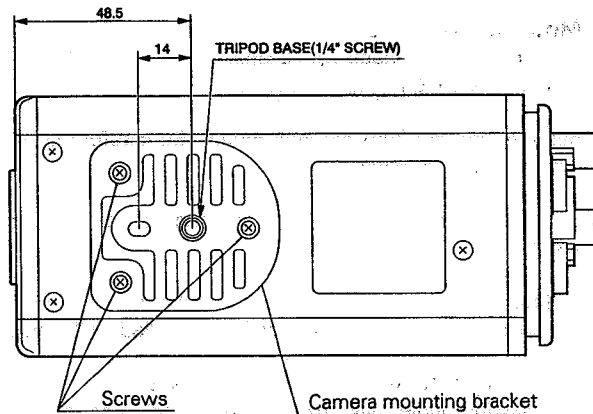
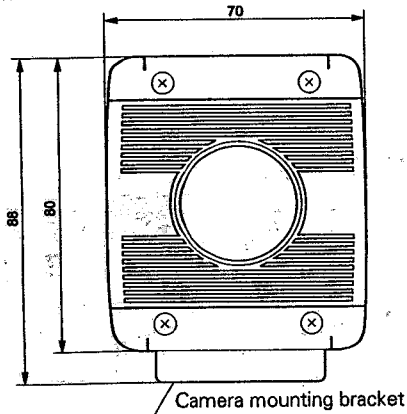
Tripods, stands, fixing units or pan/tilt units used with this camera should have a rotation stopper and camera mounting screw. If a rotation stopper is not provided, the secured section may loosen and the camera may come off.



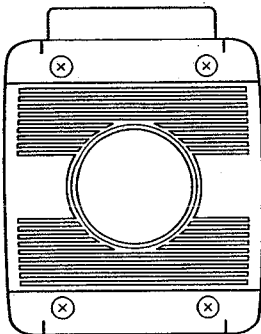
(Example) Mounting on a fixing unit



- When the camera mounting bracket is secured on the bottom



- When the camera mounting bracket is secured on the top



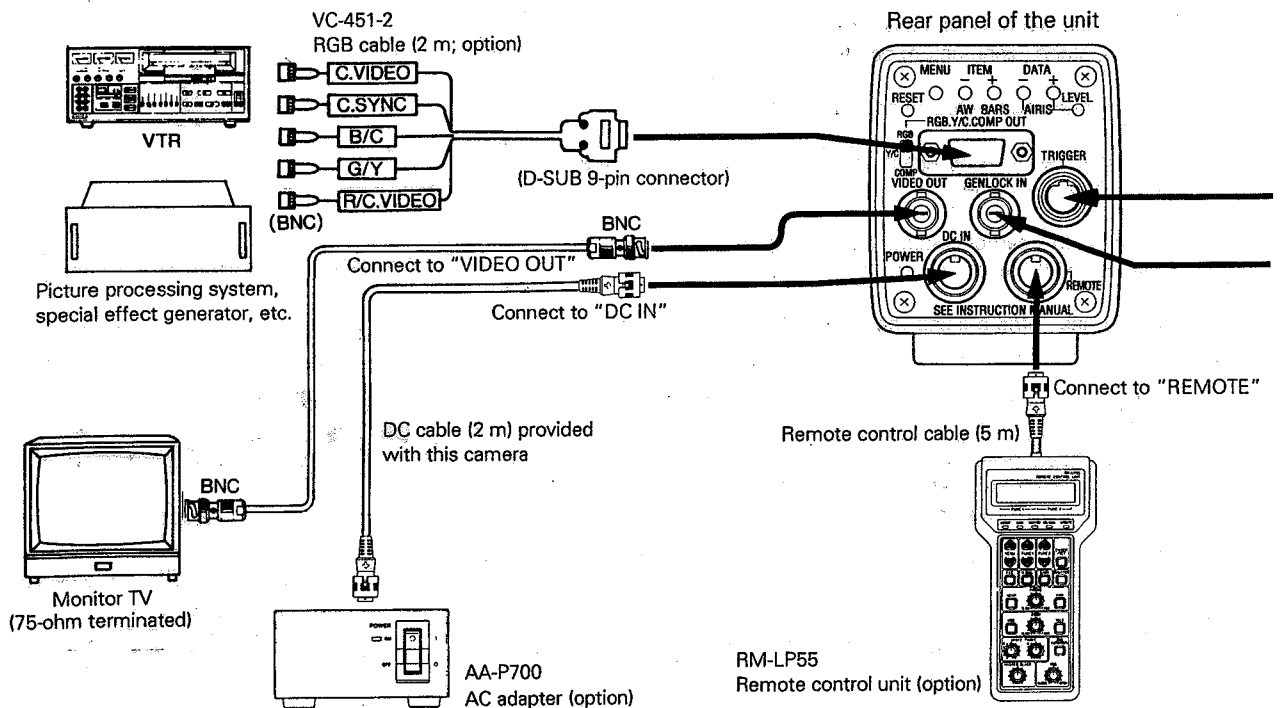
Notes:

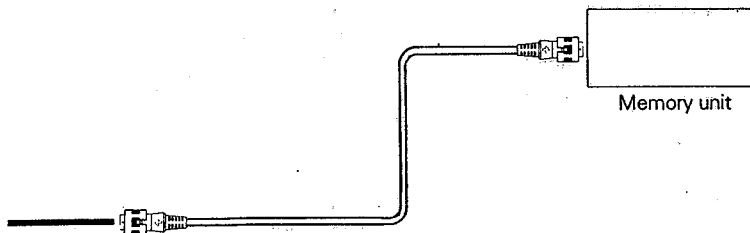
- When mounting this camera on a wall or ceiling with a fixing unit or pan/tilt unit, special precautions should be taken for security. You should ask a qualified service person to perform the installation.
- For installation, consult your JVC dealer or JVC service center. JVC is not responsible for damage to the camera caused by falling, dropping, etc., as a result of improper installation.

10

CONNECTIONS

- Before connection, make sure that the power of all equipment is turned off.





Connect to "GENLOCK"

Sync signal (composite video signal or black burst signal)
For details on genlocking connections, refer to "GENLOCKING OPERATION" on page 26.

Note:

When the coaxial cables are connected, terminate all systems including unused 75 ohm systems.

12

SETUP

To ensure clearer pictures and correct color tones, perform the back focus and white balance adjustments.

- Once the back focus adjustment has been performed during lens adjustment, no further adjustments are required.
- White balance must always be adjusted prior to shooting.

1. Prior to adjustment, make sure all necessary equipment (such as a monitor) has been connected. Refer to "CONNECTIONS" on page 11. Then set the camera's switches as shown below.
2. Connect the power plug of the AC adapter (optional AAP700) to an AC outlet and set the power switch to "ON". The camera's POWER OFF will light up.

Note:

An overcurrent detecting circuit is provided with this camera to protect the electric circuits. Therefore, when the power supply voltage fluctuates or the power of the AC adapter is switched ON and OFF repeatedly, the power may not be supplied correctly to the camera. However, this is not a malfunction.

To restore the power, first switch the power of the AC adapter to OFF, wait for several seconds, then switch the power ON again.

3. Aim the camera at an appropriate subject, operate the lens focus and zoom, and confirm that the picture is shown on the monitor.

■ Back focus adjustment

Perform this adjustment while referring to a monitor.

- The camera must be at least 3 meters from the subject to enable correct adjustment.

For zoom lens

1. Loosen the back focus fixing screw (LOCK) by turning it counterclockwise (↺) with a screwdriver.
2. Open the lens iris.
3. If the illumination is too strong (the picture is flat white), engage the EEI mode.
 - When only the camera is used, select EEI from the SHUTTER item on menu screen 1/2.
4. Turn the zoom ring to the maximum telephone position.
5. Adjust the lens focus.
6. Turn the zoom ring to the maximum wide angle position.
7. Turn the back focus adjustment screw (FOCUS) until optimum focus is obtained.
8. Repeat steps 4 to 7 two or three times.
9. Secure the back focus fixing screw (LOCK) by turning it clockwise (↻).

For fixed focus lens

1. Open the lens iris.
2. If the picture is flat white, engage the EEI mode.
3. Adjust the lens focus.

If optimum focus cannot be obtained, perform the following steps.

4. Loosen the back focus fixing screw (LOCK) by turning it counterclockwise (↺) with a screwdriver.
5. Turn the back focus adjustment screw (FOCUS) until optimum focus is obtained.
6. Secure the back focus fixing screw (LOCK) by turning it clockwise (↻).

Note:

When the adjustment is complete, release the EEI mode.

14

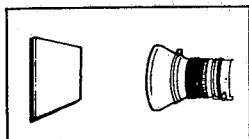
SETUP

■ White balance adjustment

- If the color temperature of the light source changes during shooting, white balance adjustment is required.

1. Check that WHITE BAL is set to "AUTO" on the MENU screen. If it is set to any other mode, set to "AUTO" using the MENU.
(Refer to [4] WHITE BAL on page 19.)

2. Shoot a white subject (white paper, white wall, etc.) or gray scale chart in full screen using the remote control.



3. Press the auto white start button (AW). The start message will be displayed.

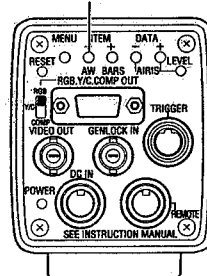
Note:

When the white paint is set with the remote control unit, white paint data is set to OFF.

- ♦ Start message

AUTO WHITE1 OPERATION	AUTO WHITE2 OPERATION
--------------------------	--------------------------

Auto white start button



4. When auto white adjustment is complete, one of the following messages is shown.

- ♦ Normal adjustment completion message

AUTO WHITE1 COMPLETED	AUTO WHITE2 COMPLETED
--------------------------	--------------------------

- ♦ Abnormal adjustment completion message (1)

AUTO WHITE1 LOW LIGHT ERROR	AUTO WHITE2 LOW LIGHT ERROR
--------------------------------	--------------------------------

- ♦ Abnormal adjustment completion message (2)

AUTO WHITE1 OVER LIGHT ERROR	AUTO WHITE2 OVER LIGHT ERROR
---------------------------------	---------------------------------

- ♦ Abnormal adjustment completion message (3)

AUTO WHITE1 OBJECT ERROR	AUTO WHITE2 OBJECT ERROR
-----------------------------	-----------------------------

Note:

This camera only has the AUTO1 mode. However, when WHITE BAL is activated with the RM-LP55, 2 modes (AUTO1/AUTO2) are available.

Notes:• **SUBJECT ERROR**

The subject is color.

Shoot a white subject.

The color temperature is out of the adjustment range (2500K to 8000K).

Insert the color temperature conversion filter in front of the lens.

• **LOW LIGHT ERROR, OVER LIGHT ERROR**

The illuminance of the subject is too low or high.

Adjust the illumination.

■ **Full-time auto white balance****(automatic color temperature maintenance)**

- The full-time auto white balance automatically adjusts white balance even if lighting conditions change to maintain optimum balance at all times.

Refer to "Full-time auto white balance" on page 30.

1. Set the WHITE BAL on the MENU1/2 to "FAW".

(Refer to [4] "WHITE BAL" on page 19.)

Note:

If the overall screen has a mono color tone or a vividly colored subject is shot, optimum balance adjustment is not possible. This is a phenomenon caused by the operation principle and not a malfunction. In this case, adjust white balance again following "White balance adjustment" on page 15.

OPERATIONS (MENU operation)

The following menus are available for this camera.

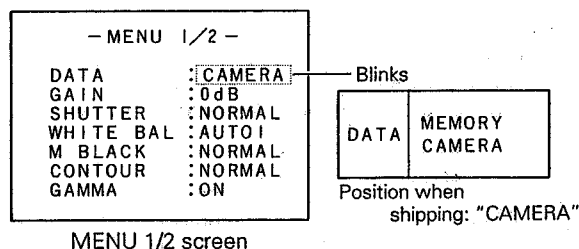
- Menu
- Dynamic shading compensation (see page 23)
- STATUS check menu (see page 24)

[MENU operation method]

- ① Pressing the MENU button outputs the MENU 1/2 screen.
- ② Move the cursor to the data to be changed with the ITEM (-) and (+) buttons. The selected data will blink.
- ③ Change the data with the DATA (-) and (+) buttons.
- ④ Repeat steps ② and ③.
- ⑤ When the all settings on MENU 1/2 are complete, press the MENU button to display the MENU 2/2 screen.
- ⑥ Repeat steps ② and ③.
- ⑦ When the all settings on MENU 2/2 are complete, press the MENU button. MENU 2/2 disappears, indicating that MENU setting is complete.

[1] DATA

- To maintain the conditions set up with the RM-LP55.
- ① Select the "DATA" with the ITEM (-) and (+) buttons so that the data blinks.
 - ② Change the data with the DATA (-) and (+) buttons.



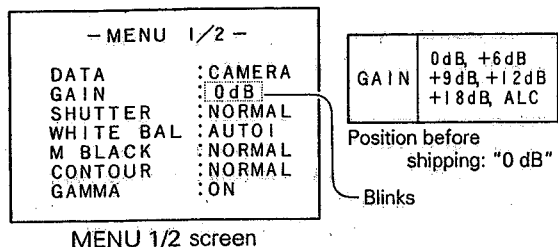
CAMERA : Normal use. This setting is used when the camera is used by itself.

MEMORY: This setting is used when the remote control data is stored in the camera with the RM-LP55. (For details, refer to the RM-LP55's instruction manual.)

Even if the RM-LP55 is disconnected and the power switch is turned ON and OFF, data set by the RM-LP55 is retained.

[2] GAIN

- To increase the sensitivity electronically
- ① Select the "GAIN" with the ITEM (-) and (+) buttons so that the data blinks.
- ② Change the data with the DATA (-) and (+) buttons.



When a subject is too dark and sufficient light cannot be obtained, the sensitivity of the camera can be increased electronically.

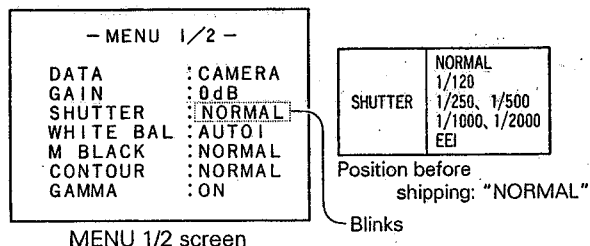
The increased amount of the sensitivity

- 0 dB : Standard
- +6 dB : Double
- +9 dB : 2.8 times
- +12 dB : 4 times
- +18 dB : 8 times

- The higher the sensitivity, the coarser the picture.
 - The ALC sets automatically the camera sensitivity according to the brightness of the subject.
- See "ALC and EEI operations" on page 29.

[3] SHUTTER

- Setting the Shutter mode
- ① Select "SHUTTER" with the ITEM (-) and (+) buttons so that the data blinks.
- ② Change the data with the DATA (-) and (+) buttons.



- Useful when shooting a fast-moving subject.
- In the NORMAL mode, the shutter speed is 1/50 sec. The shutter speed can be selected from 1/120, 1/250, 1/500, 1/1000, 1/2000 and EEI.
- EEI function lets the electronic shutter automatically set the level when operating under very bright illumination. See "ALC and EEI operation" on page 29.

Note:

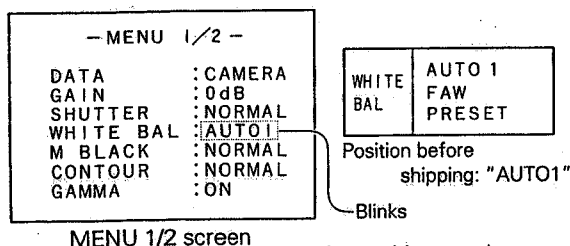
Use the EEI mode outdoors. When the EEI mode is used under a fluorescent lamp, the image may flicker.

18

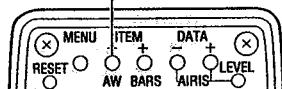
OPERATIONS (MENU operation)

[4] WHITE BAL

- White balance adjustment
- ① Select "WHITE BAL" with the ITEM (-) and (+) buttons so that the data blinks.
- ② Change the data with the DATA (-) and (+) buttons.



Auto white start button



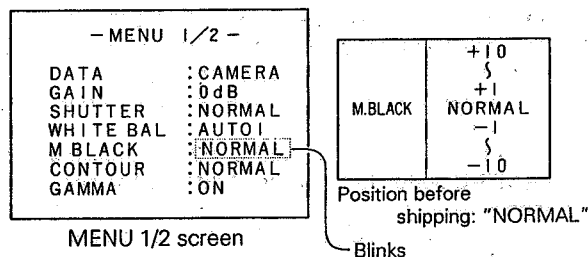
AUTO1 : Activates white balance set with the automatic adjustment function. Engage this mode with the ITEM (-)/AW button.

PRESET : Activates white balance set under illumination with the color temperature of 3200K.

FAW : Automatic color temperature maintenance white balance.
See "Full-time auto white balance" on page 30.

[5] M BLACK

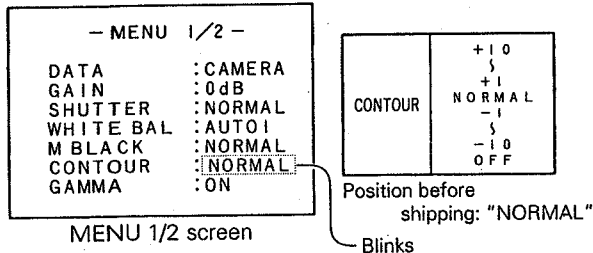
- Setting the master black level
- ① Select the "M BLACK" with the ITEM (-) and (+) button so that the data blinks.
- ② Change the data with the DATA (-) and (+) buttons.



- The reference black level (master black) can be set.
+10 : Highest black level condition
-10 : Lowest black level condition

[6] CONTOUR

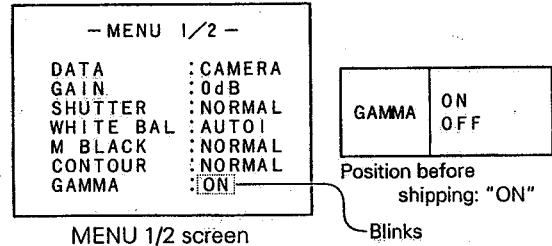
- Contour compensation adjustment
- ① Select "CONTOUR" with the ITEM (-) and (+) buttons so that the data blinks.
- ② Change the data with the DATA (-) and (+) buttons.



- Contour compensation function electronically emphasizes the peaks and valleys of a video signal to obtain a sharper picture.
- | | |
|--------|-------------------|
| +10 | : Much |
| NORMAL | : Standard |
| -10 | : A little |
| OFF | : No compensation |

[7] GAMMA

- Setting the gamma compensation
- ① Select "GAMMA" with the ITEM (-) and (+) buttons so that the data blinks.
- ② Change the data with the DATA (-) and (+) buttons.



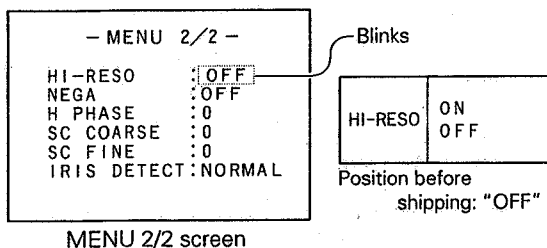
- The gamma compensation is set to ON and OFF.
- ON : Gamma compensation applied (gamma ratio of 0.45)
- OFF: No gamma compensation applied (gamma ratio of 1)

20

OPERATIONS (MENU operation)

[8] HI-RESO

- Setting the High-resolution mode
- ① Select the "HI-RESO" with the ITEM (-) and (+) buttons so that the data blinks.
- ② Change the data with the DATA (-) and (+) buttons.



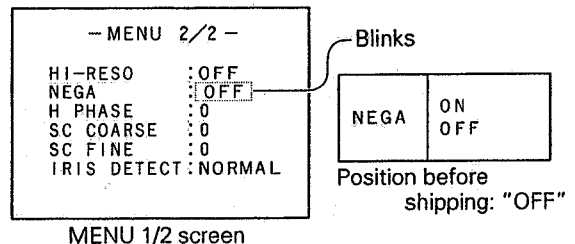
- The HI-RESO mode enhances the resolution in the vertical direction and should be used when shooting a still picture or when using this camera as a microscope. (Storage time is 1/25 sec.)
- ON: The HI-RESO mode is engaged. See "HI-RESO mode" on page 31.
- OFF: The Normal Shooting mode is engaged.

Note:

When a moving subject is shot in the HI-RESO ON mode, the after-image lag phenomenon is greater than in the OFF mode.

[9] NEGA

- Setting negative video
- ① Select "NEGA" with the ITEM (-) and (+) buttons so that the data blinks.
- ② Change the data with the DATA (-) and (+) buttons.



- Use when taking a positive film from a negative film.
- ON : The camera video signals are reversed (negative) for output.
- OFF: The camera video signals are output.

[10] H PHASE

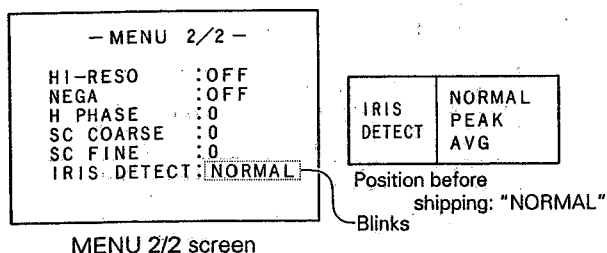
[11] SC COARSE

[12] SC FINE

Refer to "GENLOCKING OPERATION" on page 26.

[I3] IRIS DETECT

- Setting the Iris Detection mode
- ① Select "IRIS DETECT" with the ITEM (-) and (+) buttons so that the data blinks.
- ② Change the data with the DATA (-) and (+) buttons.



- Use to change the iris setting according to the subject.
(The selected IRIS DETECT mode is activated only when the LENS mode is set to "AUTO".
NORMAL : Standard setting
PEAK : The iris is set for the peak of the video level.

Use this mode when shooting a subject lit by a spot light.

AVG : The iris is set to the average value of the video level.

Use this mode to obtain a brighter shot of a backlit subject.

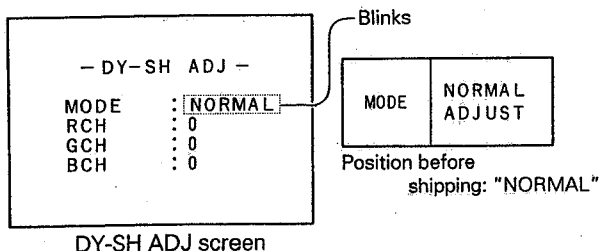
22

OPERATIONS (MENU operation)

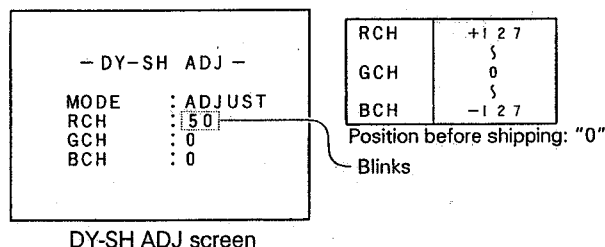
■ DY-SH ADJ

- Dynamic shading adjustment

Shoot a white subject (white paper, white wall, etc.) in full screen and adjust the R/G/B data so that the coloring in the upper and lower parts of the monitor screen is minimized.



- ① While holding the MENU button pressed, press the ITEM (-) button. Then, release the MENU button.
- ② Set the mode to "ADJUST" with the DATA (-) and (+) buttons.
- ③ Move the cursor to the data to be changed. The selected data will blink.



- ④ Change the data with the DATA (+) and (-) buttons.
- ⑤ Repeat steps ③ and ④.
- ⑥ When the settings for DY-SH ADJ are complete, press the MENU button. The DY-SH ADJ screen goes out.

Note:

Note that if you press the MENU button while holding the ITEM (-) button pressed, the AUTO WHITE MODE is engaged.

■ STATUS check operation

Two STATUS screens are available. These screens allow you to check the conditions set on the camera's MENU screen or the settings stored in memory using the local remote control (RM-LP55).

- ① While holding the MENU button pressed, press the ITEM (+) button. Then, release the MENU button. The status 1/2 screen will appear.
- ② When the DATA on the MENU 1/2 screen is set to "CAMERA", the setting conditions set on the MENU screen are shown. When it is set to "MEMORY", settings stored in memory using the remote control unit (RM-LP55) are shown.
- ③ Press the MENU button to show the STATUS 2/2 screen.
- ④ Press the MENU button to end the STATUS screen.

Note:

When the DATA is set to CAMERA on the STATUS 1/2 screen (without using the RM-LP55) pressing and holding the ITEM (+) button causes color bars and camera pictures to alternate on the screen. In this condition, press the MENU button.

- STATUS 1/2 -	
DATA	: REMOTE
GAIN	: 0dB
SHUTTER	: NORMAL
WHITE BAL	: AUTO1
<RCH:0 BCH:0>	
M BLACK	: NORMAL
CONTOUR	: NORMAL
GAMMA	: ON

STATUS 1/2 screen

- STATUS 2/2 -	
HI-RESO	: OFF
NEGA	: OFF
H PHASE	: 0
SC COARSE	: 0
SC FINE	: 0
IRIS DETECT	: NORMAL
IRIS LEVEL	: NORMAL

STATUS 2/2 screen

Note:

H PHASE, SC COARSE and SC FINE are displayed only while genlocking is performed.

24

OPERATIONS (MENU operation)

■ Remote control unit (option) function table

Functions	Operations on this camera	Operations with the RM-LP55
MODE	○ BARS/CAM	} ○ BARS/CAM/NEGA
NEGA	○ ON/OFF	
CONTOUR	○ ON (LEVEL)/OFF	○ ON (LEVEL)/OFF
GAMMA	○ ON/OFF	○ ON/OFF
MASTER BLACK LEVEL	○	○
AI LEVEL	○ (ALC, ALC + EEI, EEI)	○ (ALC, ALC + EE, EEI)
IRIS DETECT	○ NORMAL/PEAK/AVG	○ NORMAL/PEAK/AVG
WHITE BALANCE	○ AUTO/FAW/PRESET	○ PRESET/MANUAL/AUTO1/AUTO2/FAW
WHITE PAINT	x	○ AUTO1/AUTO2
GAIN	○ 0 dB/+6 dB/+9 dB/+12 dB/+18 dB/ALC	○ 0 dB/+6 dB/+9 dB/+12 dB/+18 dB/ALC/ALC + EEI
SHUTTER	○ NORMAL, 1/120, 1/250, 1/500, 1/1000, 1/2000, EEI	○ NORMAL, 1/120, 1/250, 1/500, 1/1000, 1/2000, V. SCAN, EEI
TITLE INDICATION	x	○ ON/OFF
TITLE INDICATION POSITION	x	○
TITLE SETTING	x	○
DATA	○ MEMORY/CAMERA	x
FILE	x	○ FILE (READ, SAVE, RM DATA TO CAM)
D-SUB OUT	○ Y/C, RGB, COMPONENT	x
H. PHASE	○	○
SC COARSE	○ 0°/90°/180°/270°	○ 0°/90°/180°/270°
SC FINE	○	○
RANDOM TRIGGER	x	○ OFF/ON (1/50, 1/120, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000)
SYNC RESET	△ RESET/NON-RESET (DIP SW)	x
HI-RESO	○ ON/OFF	○ ON/OFF
DYNAMIC SHADING	○ ADJUST/NORMAL	x

○ : This function available.

x : This function is not available.

△ : Modify

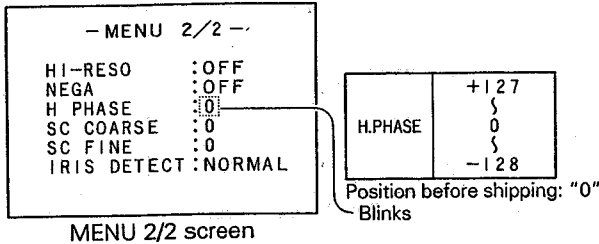
GENLOCKING OPERATION

When pictures from more than one camera are to be processed (fade in, fade out, and mix wipe) with a special effects generator (SEG), genlocking is used to synchronize the various camera pictures.

- The sync phase adjustment can be performed with the remote control unit (optional RM-LP55) as well.

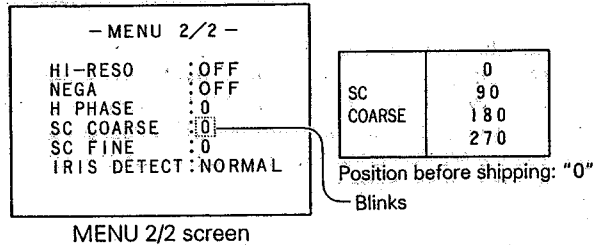
[10] H. PHASE

- Adjustment of the horizontal sync phase
- Select the "H PHASE" with the ITEM (-) and (+) buttons so that the data blinks.
 - Change the data with the DATA (-) and (+) buttons.



[11] SC COARSE

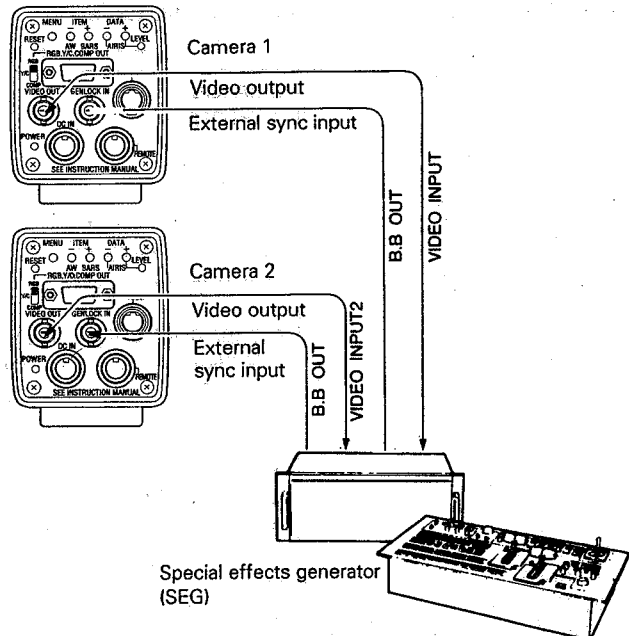
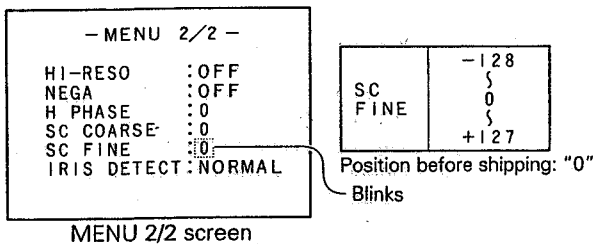
- Adjustment of the color sync phase
- Perform coarse adjustment with the color sync phase coarse adjustment. (0°/90°/180°/270°)
- Select "SC COARSE" with the ITEM (-) and (+) buttons so that the data blinks.
 - Change the data with the DATA (-) and (+) buttons.



26

[12] Adjustment of the SC FINE

- Fine adjustment is performed by changing the color sync phase fine adjustment data.
- Select "SC FINE" with the ITEM (-) and (+) buttons so that the data blinks.
 - Change the data with the DATA (-) and (+) buttons.



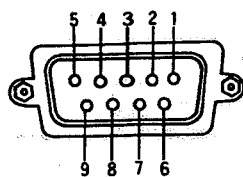
Notes:

- If a vector scope and a waveform monitor are available, these adjustments can be performed accurately.
- A VCR playback signal cannot be used as a sync signal. Be sure to use a TBC (time base corrector) such as a frame synchronizer.
- Be sure to use an underscan monitor as a monitor.

CONNECTORS

■ D-SUB connector

(9-pin, female)

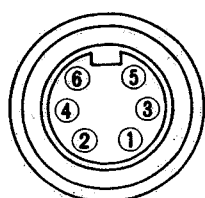


(Viewed from front)

Pin No.	Signal (RGB signal selected)	Signal (Y/C signal selected)	Signal (component selected)
①	Ground	Ground	Ground
②	Ground	Ground	Ground
③	R (RED) signal output	Composite video signal output	R-Y signal output
④	G (GREEN) signal output	Y signal output	Y signal output
⑤	B (BLUE) signal output	C signal output	B-Y signal output
⑥	Composite video signal output	Composite video signal output	Composite video signal output
⑦	Composite sync signal output	Composite sync signal output	Composite sync signal output
⑧	Ground	Ground	Ground
⑨	Ground	Ground	Ground

■ Remote connector

(6-pin female)

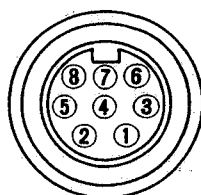


(Viewed from front)

Pin No.	Signal
①	Ground
②	OPERATE
③	Ground
④	SID2
⑤	SID1
⑥	+9 V output

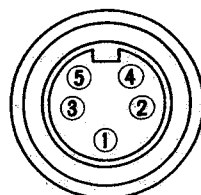
28

■ DC input



Pin No.	Signal
①	—
②	Ground
③	—
④	—
⑤	Ground
⑥	+12 V input
⑦	—
⑧	+12 V input

■ Trigger connector



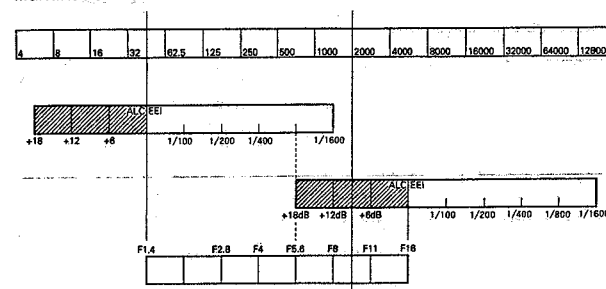
Pin No.	Signal
①	SI
②	TRG
③	GND
④	WEN
⑤	

TECHNICAL INFORMATION

■ ALC and EEI operations

- ALC refers to automatic level control and EEI to shutter iris control. The video circuit of the KY-F50 employs a system that maintains the video level at a constant level through a combination of the lens's auto iris, continuously variable electronic shutter (EEI), and automatic level (sensitivity) control circuit (ALC).
- In low-light conditions, the automatic level control circuit is activated while, in brighter light, the electronic shutter operates. Moreover, if the iris is set to auto, the sensitivity, iris, and electronic shutter will all vary continuously to automatically ensure the optimum signal level at all times.
- In the ALC mode, sensitivity (gain) is increased between 0 dB and +18 dB. In the EEI mode, the electronic shutter automatically operates at a range from 1/50 to 1/1600 second depending on the strength of the lighting. This means that in dark conditions, the signal level will be adjusted by 3 stops of the iris whereas in bright situations, it will be adjusted by a range of 5 stops.

Illumination: lux

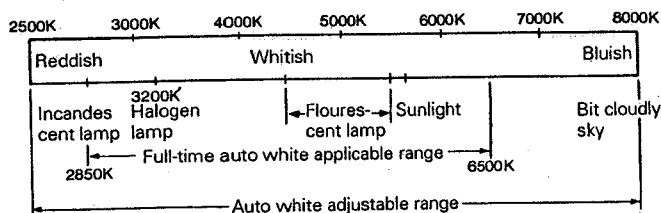


TECHNICAL INFORMATION

■ Full-time auto white balance

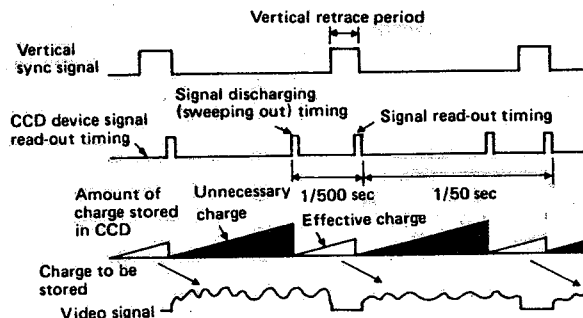
Full-time auto white balance is a function which automatically and continuously adjusts white balance as necessary. In some cases — such as when there is a single color on the screen, when the subject is wearing a vivid color, or when the color temperature of the light source changes etc., — correct white balance may not be obtained. If this occurs, we recommend you adjust the white balance by referring to "White balance adjustment" on page 15.

Color temperature



■ Operation principle of the electronic shutter (Example: 1/500 sec)

Electric charge is stored in a CCD image device for only 1/500 second before the signal is read out from the CCD device and the electric charges stored prior to that are discharged (swept out) in order to achieve a shutter speed of 1/500 second.



Cautions in the use of the electronic shutter mode

- The motion of the subject will be seen as stroboscopic motion on the monitor TV screen as a 1/500 second picture is extracted every 1/50 second.
- As flicker results under a periodic lighting such as a fluorescent lamp, it is necessary to use lighting which is free from excessive periodic changes such as an incandescent lamp.
- As the storage time of the CCD device is decreased to approximately 1/8, the drop in the amount of light will be by a factor of 1/8 of that in the normal mode. In shooting, it is necessary to increase the illumination by 8 times or increase light intensity by opening the lens aperture by 3 stops if there is sufficient light.

30

■ High-resolution mode

To increase the vertical resolution, a one line readout method is used for the CCD image sensing device. The mode activating this system is called the High-resolution mode for this camera.

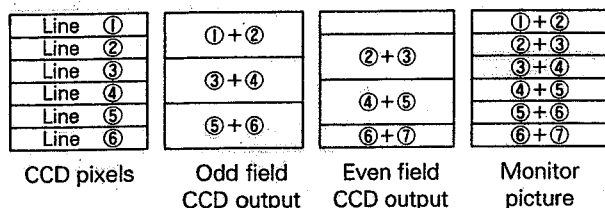
Two signal readout methods are available for the CCD image sensing device: Field storage method and frame storage method.

The field storage method (2-line simultaneous readout) stores signals for one field (1/50 sec.) while the frame storage method stores signals for one frame (1/25 sec.). The former is used for the NORMAL mode and the latter is used for the HI-RESO mode.

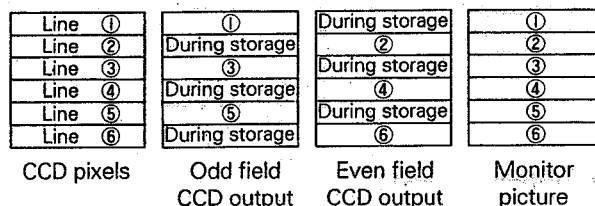
- NORMAL mode (field storage, 2-line simultaneous readout)

For field storage, 2 lines are mixed and read out simultaneously. (The combination of lines on odd fields and even fields are different.) This reduces vertical resolution. However, after-image lag is also reduced because the storage time is shorter than for frames.

As all signals are read out with one field, when analyzing the action using strobe radiation, one radiation is required for each field. If video signals are acquired for only one field, flickering occurs.



- High-resolution mode (frame storage, single line readout)
In the HI-RESO mode, as only one line is read out, the vertical resolution is increased. However, the storage time is for each frame. Thus, if the subject moves within 1/30 sec., after-image lag will result.
This mode is best suited to shooting still or slow-moving subjects. When analyzing the action with strobe radiation, one radiation is sufficient for one frame.



■ Operation of the random trigger

Used to recognize the picture by detecting an object. When the trigger signal for object detection is input, a charge is stored in the CCD pickup element of the camera to be output through synchronization with the next sync signal. This is used by latching it in memory with an SI signal which is output simultaneously. When viewing it on the monitor, the movement of the subject is stroboscopic. 2 modes are available for selection by the output timing on the camera for a trigger

input signal.

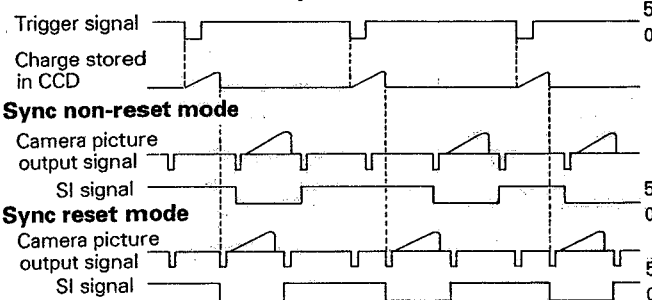
1. Sync non-reset mode

The timing of the camera is output as is, regardless of the trigger signal. When the camera is genlocked, output occurs with timing synchronized with the GENLOCK IN input signal.

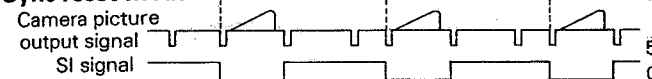
2. Sync reset mode

The camera's timing is output through synchronization with the trigger input signal. In this case, while setting up the system as the trigger signal becomes a reference signal, the genlock function does not activate.

The camera is set to the sync non-reset mode.



Sync reset mode



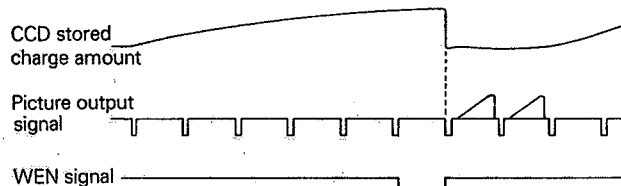
Note:

Input the grounded pulses of the GND terminal as a trigger signal into the external trigger terminal. The trigger signal should be a negative-polarity signal with a pulse width of 20 μ s to 5 ms and a pulse interval of 40 ms or more. If this signal contains noise (chattering), a malfunction may occur, making the picture disappear. When such a case occurs, turn the power off then on again.

■ Slow shutter function

Used to shoot in dark places. This function does not increase the gain electrically, but takes a long time to store the charge in the CCD pickup element so that a higher charge can be obtained, allowing higher sensitivity pictures to be obtained even under a small amount of light.

The time for storage is up to 200 frames (approx. 8 sec.). As one frame is output for several frames, it is latched in memory by outputting WEN signals at the same time. When watching it on the monitor, the movement of the subject is stroboscopic.



- In the Auto Iris mode, use with a normal video signal level is not possible. So, close the iris in the manual iris mode.
- Switching the HI-RESO mode allows selection of the field output or frame output.

Note:

When the number of frames is increased, noise may increase. Therefore, set it to the appropriate value.

32

SPECIFICATIONS

Power supply	: AA-P700
Remote control unit	: RM-LP55
Pickup device	: 1/3 inch interline CCD x 3
Effective number of pixels	: 440,000 pixels
Color separation optical system	: F1.4, RGB 3-color separation prism
Lens mount	: C mount
Color system	: PAL (wideband R-Y, B-Y encoder)
Sync system	: Internal/external
Sensitivity	: F10, 2000 lux
Actual-use minimum illuminance	: 55 lux (F3.2, +18 dB) 100 % video level
S/N ratio	: 58 dB (typical)
Horizontal resolution	: 700 TV lines (Y signal) 580 TV lines (RGB signal)
Registration	: 0.05% at center (excluding lens characteristics)
Contour correction	: Horizontal; dual-edged Vertical; single-edged
Negative function	: Provided
High-resolution mode	: Provided
Electric gain	: +6 dB, +9 dB, +12 dB, +18 dB, ALC
Electronic shutter speed	: Normal (1/50 sec) 1/120, 1/250, 1/500, 1/1000, 1/2000, EEI
External sync signal input	: Composite video signal 1 V(p-p), 75 ohm or black burst signal 0.45 V(p-p), 75 ohm
Color bars	: Built-in EBU color bars signal

Output signals

- Composite video : 1 V(p-p)
signal BNC connector one channel,
D-SUB 9-pin connector one channel
- Y/C signal Y : 1 V(p-p), 75 ohm (including sync)
C : 0.3 V(p-p), 75 ohm (burst)
D-SUB 9-pin connector one channel
- RGB signal : 0.7 V(p-p), 75 ohm (without sync) each
D-SUB 9-pin connector one channel
- Component signal: Y : 1 V(p-p) 75 ohm
R-Y/B-Y : 0.525 V(p-p) 75 ohm
D-SUB 9-pin onnector one channel
- Composite sync : 2 V(p-p), 75 ohm
signal D-SUB 9-pin connector one channel
- Trigger connector: TRG : 5 V(p-p) (Negative polarity)
SI : 5 V(p-p) (Negative polarity)
WEN : 5 V(p-p) (Negative polarity)

Remote connector : Applicable to the RM-LP55

Power supply : 12 V DC (10.5 to 15 V)

Power consumption : 8.5 W (camera only), 12 W (maximum load)

Ambient temperature

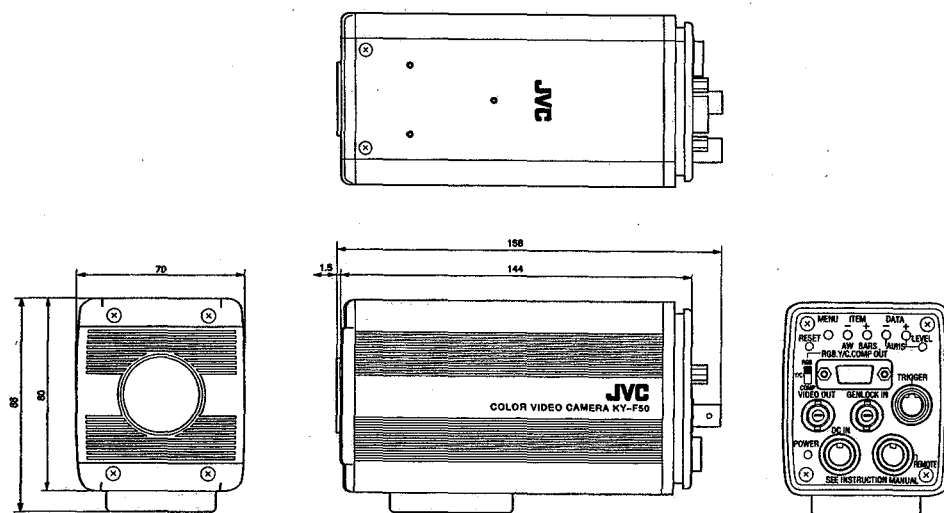
range : -5°C to 40°C (23°F to 104°F)

Weight : 870 g

Accessories : DC cable (VC462-2: 2 m) x 1

Design and specifications are subject to change without prior notice.

■ Dimensions (unit: mm)



JVC

VICTOR COMPANY OF JAPAN, LIMITED



SECTION 1 SERVICE CAUTIONS AND DISASSEMBLY

1.1 CARD FIT CABLE CONNECTION

- Insert the card fit cable so as to contact the copper leaf on its edge to the connector's conductive surface as shown in Fig. 1-1-1.
- For disconnecting the card fit cable (flat cable), pull the cable stoppers in the direction of the arrows. To secure the connection of the card fit cable, push the cable stoppers in the reverse direction of the arrows after inserting the cable.

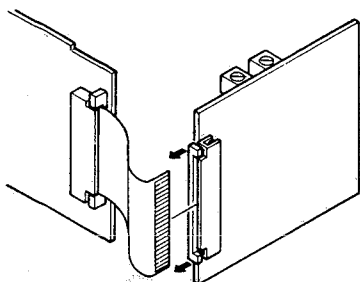


Fig. 1-1-1

1.2 REMOVAL OF COVER

1. Remove four screws (1), and then remove the rear panel (A) with the rear frame.
2. Remove two screws (2) from the cover (B).

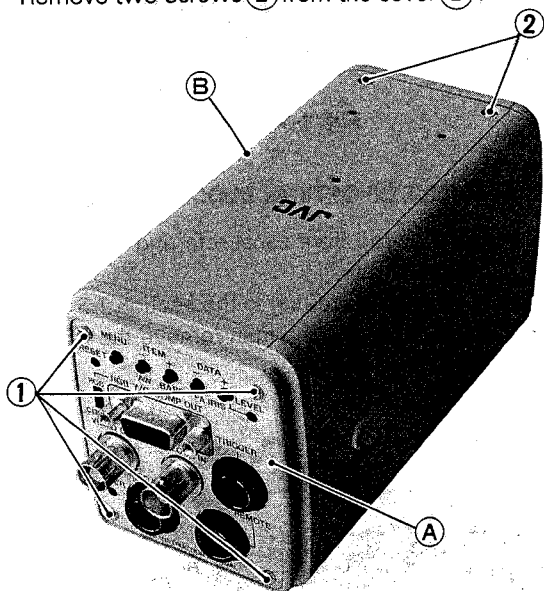


Fig. 1-2-1

3. Remove three screws (2) from the cover (B), and then pull out the cover (B) from the main chassis.

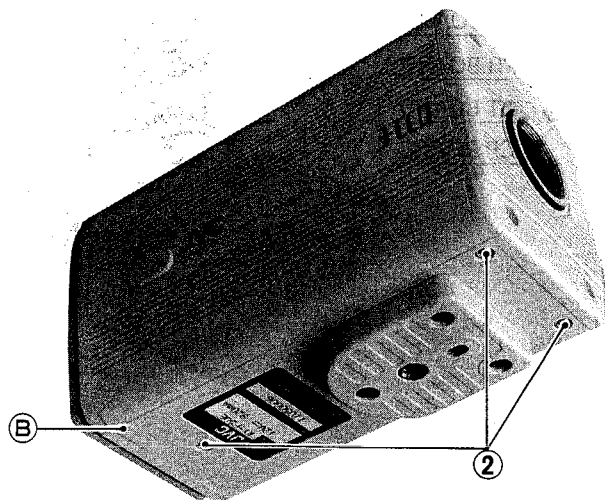


Fig. 1-2-2

1.3 REMOVAL OF CIRCUIT BOARDS

1. Remove the cover (B) referring to the section 1.2.

1.3.1 Removal of ST board

1. Remove four screws (3) while remove the ST board only. When remove the circuit board, remove a screw (4) from front of the bracket (C) and loosen the screws (5) in left and right sides, then the circuit board remove together with the bracket (C) in the direction of the arrow.

Note:

Make sure that the screws (5) are firmly tightened as the ST bracket (C) is closed.

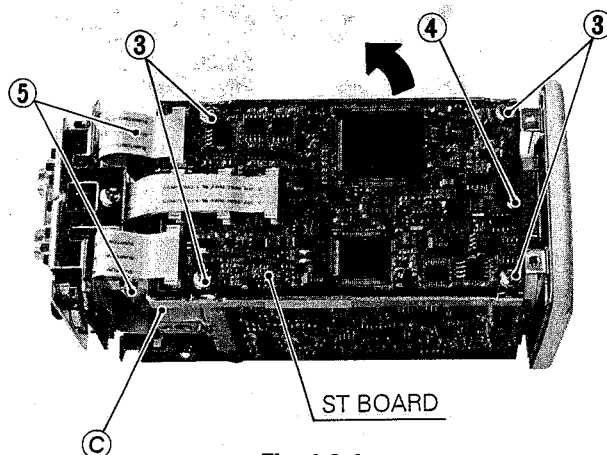


Fig. 1-3-1

1.3.2 Removal of plug-in circuit boards

1. The circuit boards named CE, PR, DT and CP are located on the MT board.
Pull out these circuit boards upward and remove them.

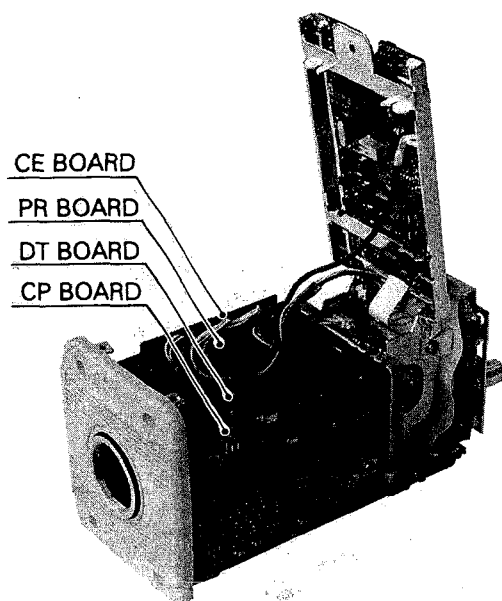


Fig. 1-3-2

1.3.3 Removal of IF board

1. Remove three screws (6) and pull the rear plate (D) rearward.

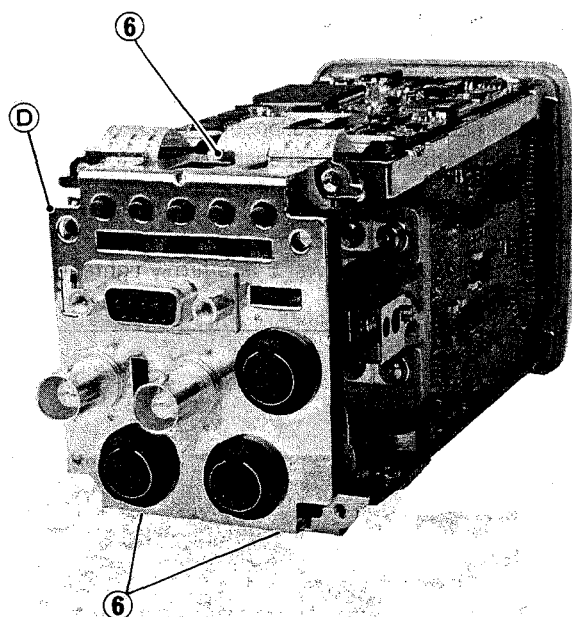


Fig. 1-3-3

2. Unsolder the connector at the points shown in Fig. 1-3-4.

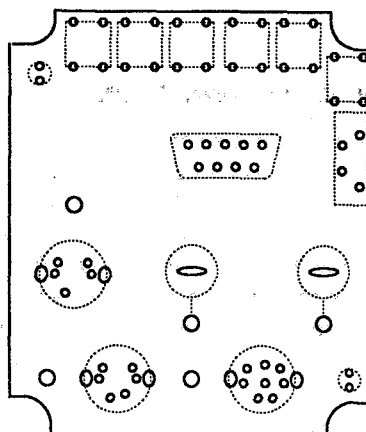


Fig. 1-3-4

1.4 REMOVAL OF FRONT PANEL

1. Remove four screws (7) from the front panel (F), and then detach the front panel (F).

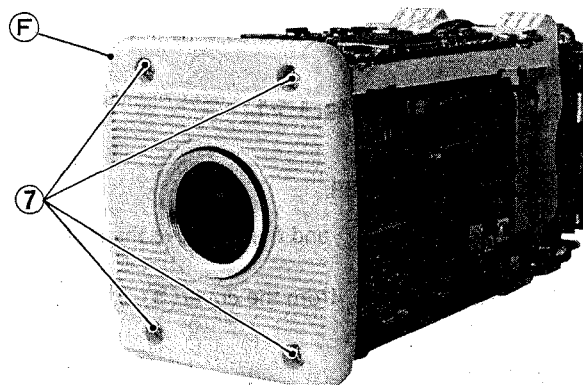


Fig. 1-4-1

1.5 REPLACEMENT OF OPTICAL BLOCK ASSEMBLY

1. Remove the cover and front panel referring to the section 1.2 and 1.4 respectively.
2. Remove the rear plate referring to the section 1.3.
3. Remove three screws (7), and then remove the ST bracket (G) from the main body.

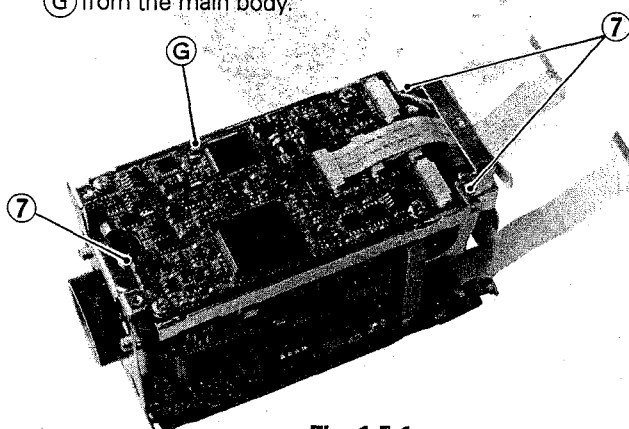


Fig. 1-5-1

4. Remove the CE, PR, DT and CP boards referring to the section 1.3.2.
5. Remove three screws (8) from frame (H).

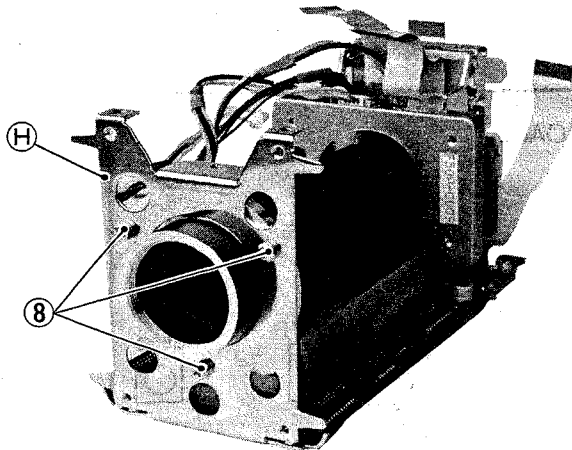


Fig. 1-5-2

6. Remove four screws (9).

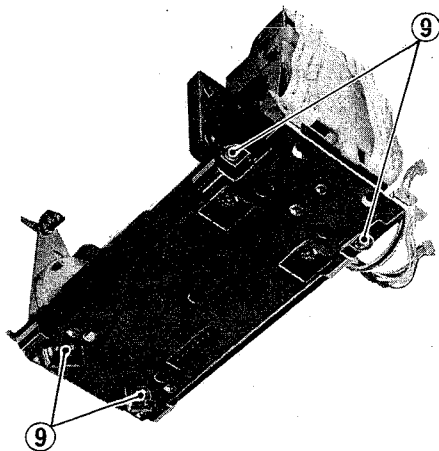


Fig. 1-5-3

7. Slide the optical block assembly to the rear as shown in Fig. 1-5-4.

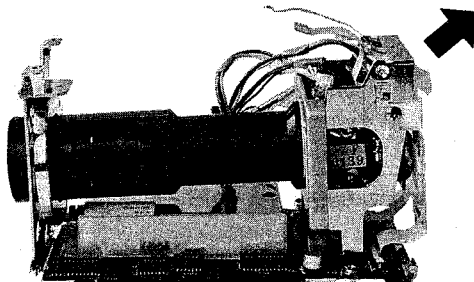


Fig. 1-5-4

8. In this condition, turn the lens assembly (I) towards the arrow and then remove the optical block assembly together with bracket (J).

Note:

When fitting the lens assembly (I) to the optical block assembly, carefully do it not to get the lens assembly free from dust, particularly the lens surface.

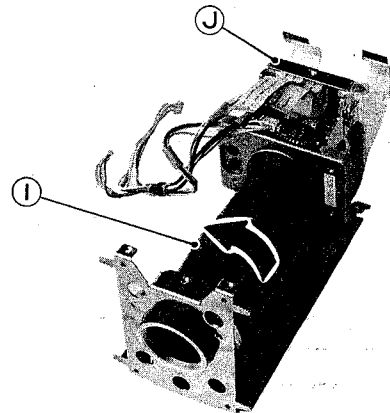


Fig. 1-5-5

9. Remove four screws (10), and then remove the bracket (J) from the optical block assembly.

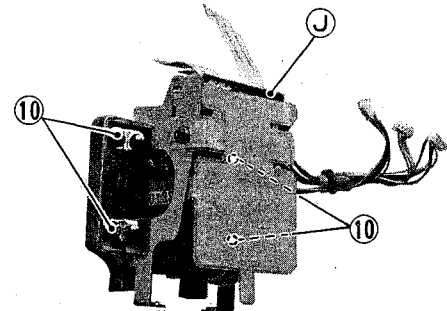


Fig. 1-5-6

Note

If something wrong is detected in the CCD, the CCD cannot be replaced alone since it is precisely glued to the prism. The defective CCD must be replaced with a new optical block assembly as a whole.

1.6 IS BOARD

The IS board is assembled with the CCD in a set. Although the assembly is removable by disconnecting it from the IC socket, do not remove it to prevent the registration from getting abnormal. For disconnecting the FPC cable, do it from the connector of the ST board. When replacing the FPC cable, be most careful not to apply unreasonable force to the board.

1.7 EXTENSION BOARD

For extending the CP, PR boards use the extension board of 24-pin or 14-pin.

24-pin: Part No. SCV2463-024
14-pin: Part No. SCV2463-014



2.2 REQUIRED EQUIPMENT FOR ELECTRICAL ADJUSTMENT

2.2.1 General instruments necessary for adjustment

1. Oscilloscope (capable of measuring on 100 MHz or higher band, moreover, must be calibrated.)
2. Vectorscope (must be calibrated.)
3. Frequency counter (readable eight-digit number and stable with tolerance of 0.1 ppm or 1×10^{-7} at 0° to 40°, moreover, must be calibrated)
4. Digital voltmeter (having 10 M Ω or more input impedance, moreover, must be calibrated)
5. Color video monitor

2.2.2 Other necessities

1. Power supply : 12V DC (Optional AC power adapter AA-P700)
2. Camera lens (H6 x 12.5R [FUJINON] preferable)
Lighting apparatus: By using a halogen lamps of 3200K, 2000lx illuminative brightness make it a chart please hit uniformly.

If the lighting apparatus is need to adjust illuminance on the test pattern, the following method is very simple to reduce video shading (to turn down contrast).
Connect an oscilloscope to the VIDEO OUTPUT terminal and adjust lighting so that video signal is observed flat at the V-rate.

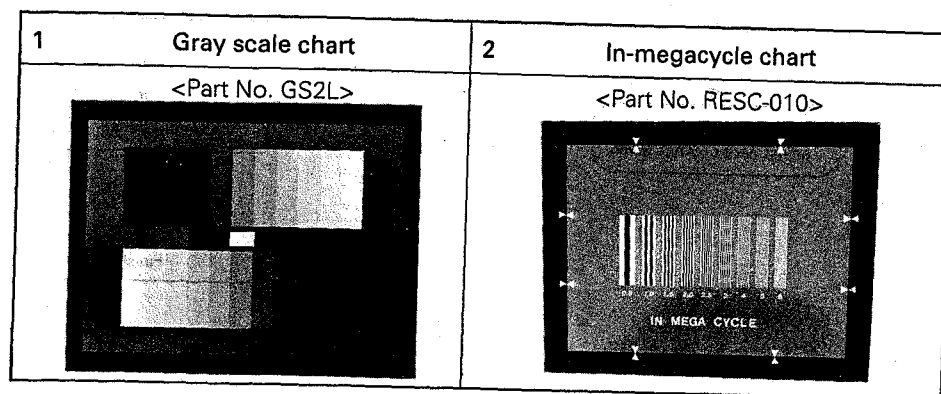


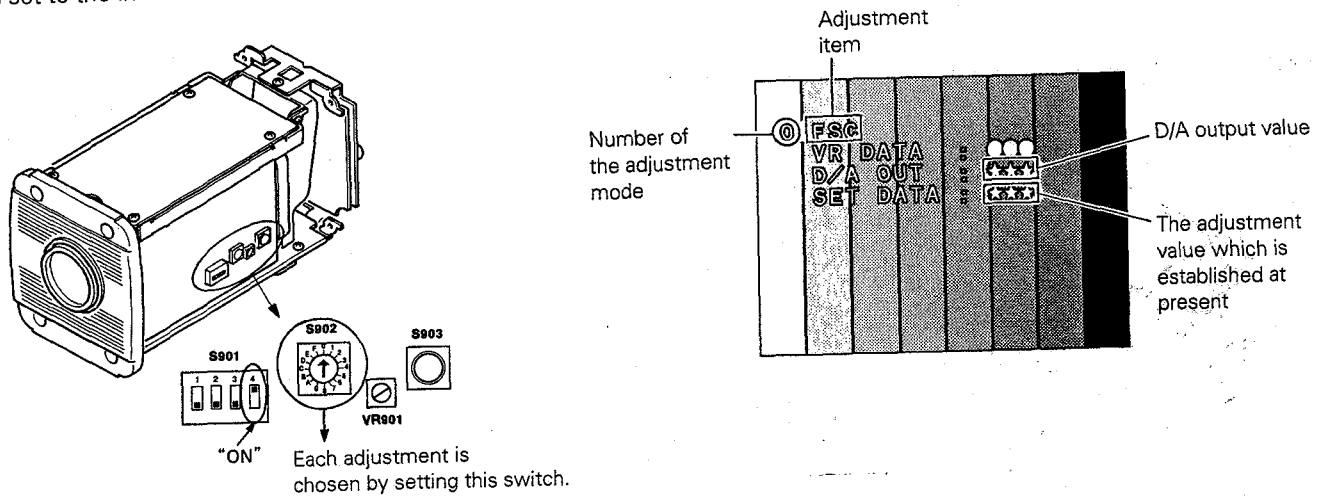
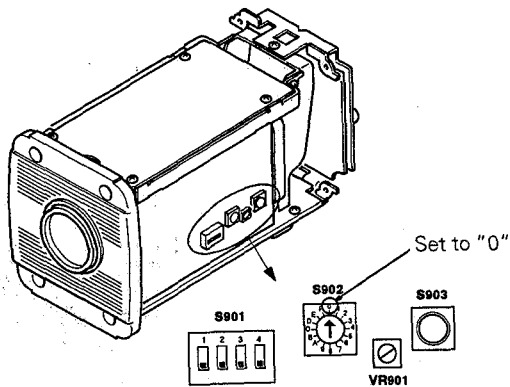
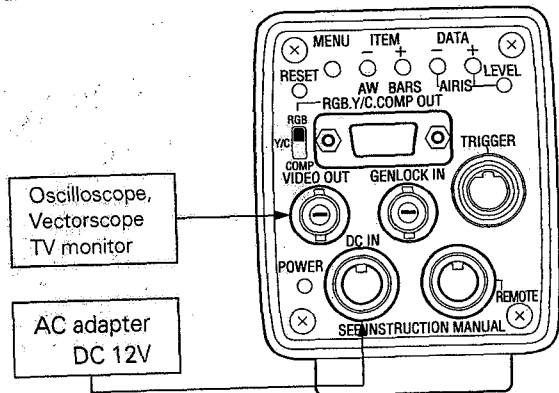
2.2.3 Special implements for electrical adjustments

NOTE

- 1) For power supply to this camera, use the power cable (Part No. CE41155-002: 8-pin plug) supplied as a service part to do it from a 12V DC power source, or use the power cable VC-462-2(accessory) to supply from the AC power adapter AA-P700 (option).
- 2) Limited length of cable for power supply is shown below (in case of using AA-P700).

Diameter of conductor	Resistance	Limited cable length
0.5 mm	37 Ω /km	8.7 m
0.75 mm	25 Ω /km	13.0 m

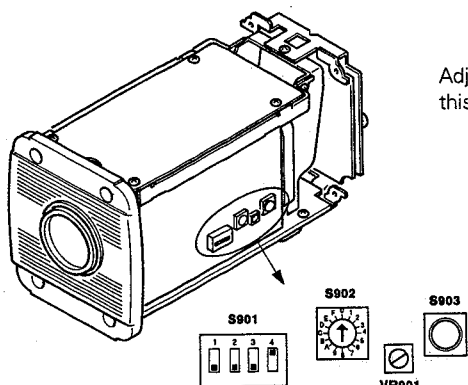




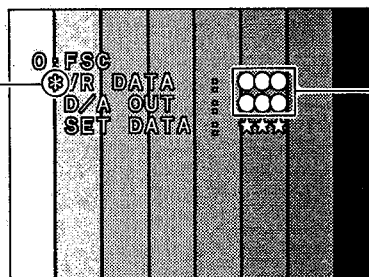
4. Press S903 (tact switch) on the CP board once, and "*" mark appears on the left of "VR DATA" in the adjustment picture. Then, each adjustment can be performed with VR901. At that time, make sure that the value of D/A OUT is the same as that of VR DATA.

If the selected adjustment is needless to perform, change the setting of S902 to another position for cancelling the selected adjustment. (Setting S901-4 to the OFF position also cancels the selection of the adjustment. However, if S901-4 is used to cancel the selected adjustment, it needs a fresh start for another adjustment in the "Adjustment mode".)

Note: S903 has two functions, one is to enter the set into the adjustable status and the other is to store the adjustment data that is set by VR901 in the microcomputer (IC901). Such being the case, if S903 is pressed in the adjustable mode ("*" mark is appearing on the left of "VR DATA"), stored adjustment data is replaced with new data. Be careful not to press S903 unreasonably.

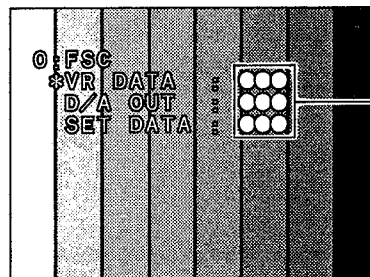
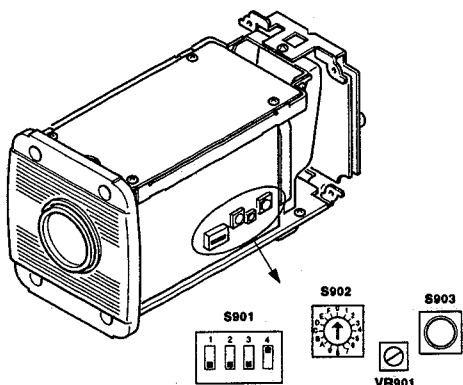


Adjustment is possible when this mark is appearing.



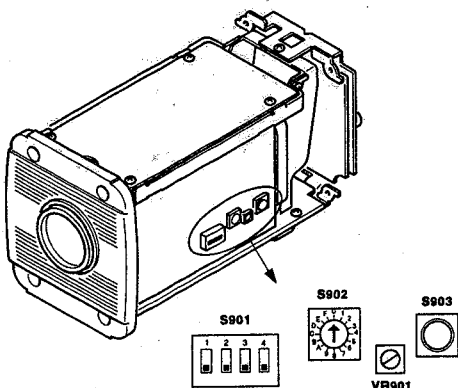
By turning VR901, values of VR DATA and D/A OUT change. (except for flare adjustment)

5. Adjust each item with VR901, press S903 after adjustment, and store adjustment data in EEPROM. In this function, confirm value of SET DATA on adjustment picture and value of VR DATA is equal.



Value of VR DATA is established as adjustment value by press S903.

Note: Return S902 to "0" and set S901-4 to OFF after all adjustments are completed.



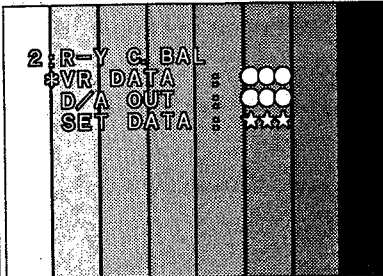
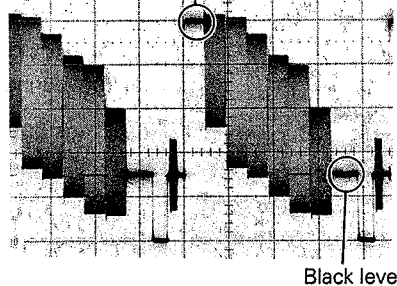
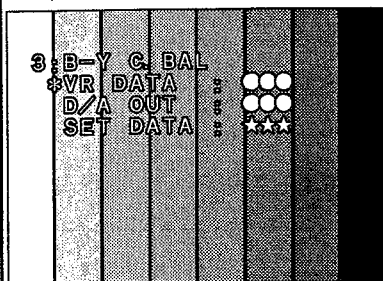
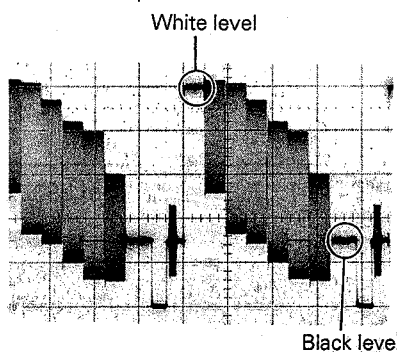
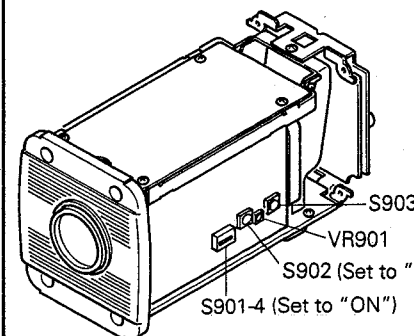
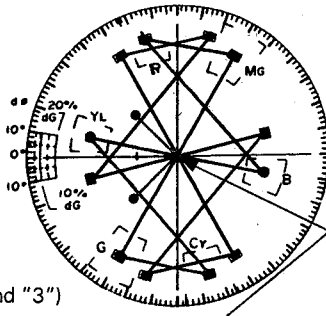
No.	Item	measuring instrument & Input signal	Mode	Measuring point (◎) Adjustment parts (①) Adjustment level (☆)	Adjustment procedure
-----	------	-------------------------------------	------	---	----------------------

2.4 ADJUSTMENT OF SSG

1	SC frequency adjustment	<ul style="list-style-type: none"> Frequency counter TV monitor 	Adj. mode "0" (Color bars output)	◎ TP103 [ST] ① VR901 [CP] ☆ $4.433618 \pm 10 \text{ Hz}$	(1) Set S902 on the CP board to "0". (2) Set S901-4 on the CP board to ON. (3) While observing through the monitor screen, press S903 on the CP board once to make "*" mark appear on the left of "VR DATA" on the display. (4) Adjust VR901 to obtain the specified level at the measuring point. (5) Press S903 on the CP board to store the adjustment data in the memory.
2	Error voltage adjustment	<ul style="list-style-type: none"> Digital voltmeter TV monitor 	Adj. mode "1" (Color bars output)	◎ TP104 [ST] ① VR901 [CP] ☆ $2.5 \pm 0.1 \text{ V DC}$	(1) Set S902 to "1". (2) Press S903 on the CP board once to make "*" mark appear on the left of "VR DATA" on the display. (3) Adjust VR901 so that DC voltage at TP104 is 2.5 V DC. (4) Press S903 to store the adjustment data in the memory. (5) Set S902 to "0" and return S901-4 to OFF after adjustment.

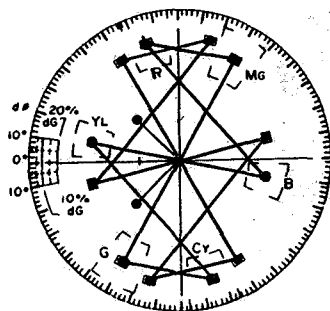
No.	Item	measuring instrument & Input signal	Mode	Measuring point (⊙) Adjustment parts (①) Adjustment level (☆)	Adjustment procedure
-----	------	-------------------------------------	------	---	----------------------

2.5 ADJUSTMENT OF ENCODER

1	Carrier balance adjustment	<ul style="list-style-type: none">• Oscilloscope (H-rate, 10:1)• TV monitor	Adj. mode "2": R-Y (Color bars output)	<p>⊙ VIDEO OUTPUT terminal (with 75 Ω terminator)</p> <p>① VR901 [CP]</p>	<p>(1) Set S902 on the CP board to "0" and set S901-4 on the same board to ON.</p> <p>(2) Set S902 to "2".</p> <p>(3) Press S903 on the CP board once to make "*" mark appear on the left of "VR DATA" on the display.</p> <p>(4) Adjust VR901 to minimize carrier leak in the white and black components.</p> <p>(5) Press S903 on the CP board to store the adjustment data in the memory.</p>	
						
			<p>Adj. mode "3": B-Y (Color bars output)</p> <p>⊙ VIDEO OUTPUT (with 75 Ω terminator)</p> <p>① VR901 [CP]</p> 			
<ul style="list-style-type: none">• Oscilloscope (H-rate, 10:1)• Vectorscope• TV monitor			<p>Adj. mode "2" & "3"</p> <p>⊙ VIDEO OUTPUT (with 75 Ω terminator)</p> <p>① VR901 [CP]</p>			<p>(6) Set S902 to "3".</p> <p>(7) Press S903 on the CP board once to make "*" mark appear on the left of "VR DATA" on the display.</p> <p>(8) Adjust VR901 to minimize carrier leak in the white and black components.</p> <p>(9) Press S903 to store the adjustment data in the memory.</p>
			 <p>Adjust to locate the center bright spot of the color bars signal in the center of a vectorscope screen.</p>			<p>(10) Repeat the previous steps (1) through (9) until the adjustment is finally satisfactory in the following two points.</p> <ol style="list-style-type: none">1. Carrier leak in the white and black components is at minimum level. (less than 20 mV p-p)2. The bright spot (white and black spots) in the center of the color bars signal is positioned in the center (intersection point of R-Y and B-Y axes) of the vectorscope screen. (Refer to the figure on the left.)

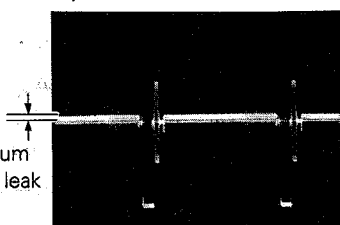
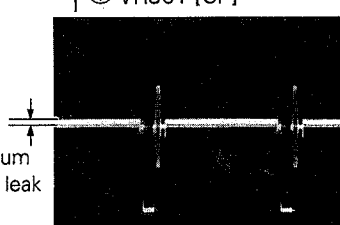
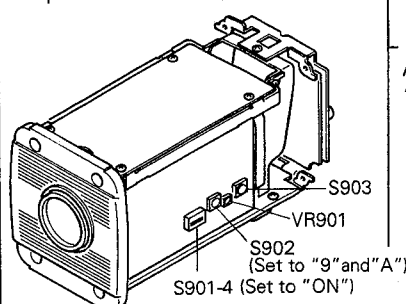
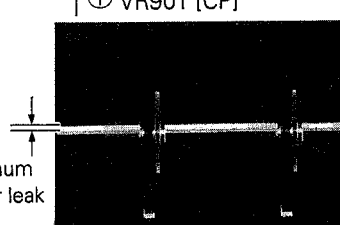
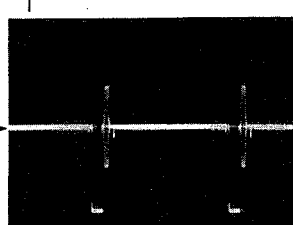
No.	Item	measuring instrument & Input signal	Mode	Measuring point (⊙) Adjustment parts (①) Adjustment level (☆)	Adjustment procedure
-----	------	-------------------------------------	------	---	----------------------

2	Chroma level adjustment	<ul style="list-style-type: none"> • Vectorscope • TV monitor 	Adj. mode "2" or "3" (Color bars output)	⊙ VIDEO OUTPUT terminal (with 75 Ω terminator) ☆ C.LEVEL (VR801) [CE]	<ol style="list-style-type: none"> (1) Set S902 to "2" or "3" and output color bars signal. (2) Set the GAIN control (level regulating VR) of the vectorscope to the preset position, and confirm that the burst level is 75 % of the full level. If not, adjust the burst level to be 75 % with the GAIN control. (3) Adjust VR801 to position each spot (R, G, B, Mg, Cy, Yl) at the center of the respectively specified points (⊕ marks) on the vectorscope screen. (4) Set S902 to "0" and return S901-4 into OFF after adjustment.
---	-------------------------	---	--	---	--



No.	Item	measuring instrument & Input signal	Mode	Measuring point (⊙) Adjustment parts (①) Adjustment level (☆)	Adjustment procedure
-----	------	-------------------------------------	------	---	----------------------

2.6 ADJUSTMENT OF BLACK LEVEL

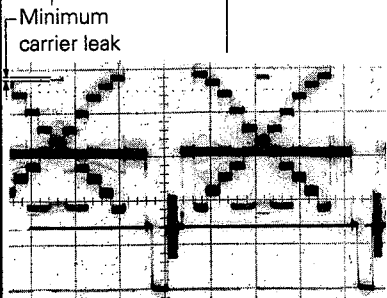
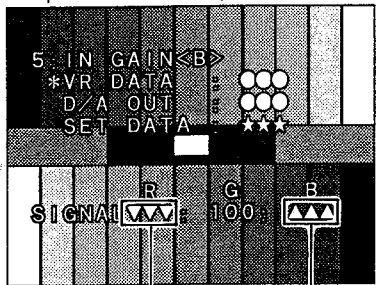
1	Black adjustment	<ul style="list-style-type: none">• Oscilloscope (H-rate, 10:1)• TV monitor	Adj. mode "9": Rch	⊙ VIDEO OUTPUT terminal (with 75 Ω terminator) ① VR901 [CP]	(1) Close the lens iris. (2) Set S902 on the CP board to "0" and set S901-4 to ON. (3) Set S902 to "9". (4) Observing through the monitor screen, press S903 on the CP board once. Then, "*" mark appears on the left of "VR DATA" on the display. (5) Adjust VR901 to minimize carrier leak in the black component. (6) Press S903 on the CP board to store the adjustment data in the memory.		
							
			Adj. mode "A": Bch	⊙ VIDEO OUTPUT terminal (with 75 Ω terminator) ① VR901 [CP]	(7) Set S902 to "A". (8) Press S903 once to make "*" mark appear on the left of "VR DATA" on the display. (9) Adjust VR901 to minimize carrier leak in the black component. (10) Press S903 on the CP board to store the adjustment data in the memory.		
							
			Adj. mode "9" & "A"	⊙ VIDEO OUTPUT terminal (with 75 Ω terminator) ① VR901 [CP]	(11) Repeat the previous steps (1) through (10) until the adjustment is finally satisfactory in the following two points. 1. Carrier leak in the black component is at minimum level. 2. There is a black spot in the center of vectorscope.		
							
2	Master black adjustment	<ul style="list-style-type: none">• Oscilloscope (H-rate, 10:1)• TV monitor	Adj. mode "B"	⊙ VIDEO OUTPUT terminal (with 75 Ω terminator) ① VR901 [CP] ☆ Pedestal level	(1) Close the lens iris. (2) Set S902 to "B". (3) Press S903 once to make "*" mark appear on the left of "VR DATA" on the display. (4) Adjust VR901 so that black level becomes pedestal. (5) Press S903 on the CP board to store the adjustment data in the memory. (6) Set S902 to "0" and return S901-4 to OFF after adjustment.		
							

No.	Item	measuring instrument & Input signal	Mode	Measuring point (◎) Adjustment parts (①) Adjustment level (☆)	Adjustment procedure
-----	------	-------------------------------------	------	---	----------------------

2.7 ADJUSTMENT OF WHITE LEVEL

- This adjustment is not needed generally but needed after replacement of the optical block assembly or the EEPROM (IC903 on the CP board).

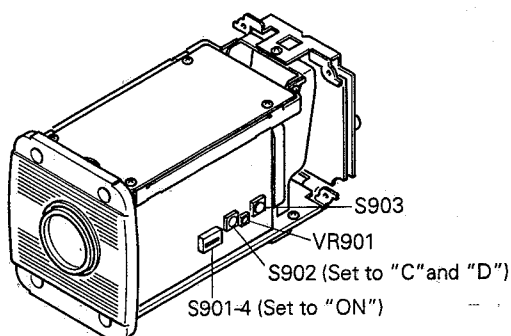
For performing this adjustment, make sure to use the halogen lamp of the specified color temperature and intensity of illumination, otherwise this adjustment may fall into unsatisfactory result.

1	Input gain adjustment	<ul style="list-style-type: none"> • TV monitor • Oscilloscope • Gray scale chart (Just scan) 	Adj. mode "4": G ch	◎ VIDEO OUTPUT terminal ① VR901 [CP] ☆ G : 100	(1) Set S902 on the CP board to "0". (2) Set S901-4 on the CP board to ON. (3) Set S902 to "4". (4) Set S901-3 to ON. (5) Set the lens iris to F10. (6) Press S903 once to make "*" mark appear on the left of "VR DATA" on the display. (7) While shooting the gray scale chart, adjust VR901 so that the value of G becomes "100" on the display. (8) Press S903 to store the adjustment data in the memory.
			Adj. mode "4": R ch	◎ VIDEO OUTPUT terminal ① VR901 [CP] ☆ Carrier leak : Minimum	(9) Set S901-3 to OFF. (10) Press S903 once to make "*" mark appear on the left of "VR DATA" on the display. (11) Adjust VR901 to minimize carrier leak in the white portion of the gray scale chart. (12) Press S903 to store the adjustment data in the memory.
			Adj. mode "5": B ch	◎ VIDEO OUTPUT terminal ① VR901 [CP] ☆ Carrier leak : Minimum	(13) Set S902 to "5". (14) Press S903 once to make "*" mark appear on the left of "VR DATA" on the display. (15) Adjust VR901 to minimize carrier leak in the white portion of the gray scale chart. (16) Press S903 to store the adjustment data in the memory.
				◎ VIDEO OUTPUT terminal ① VR1 [DT] ① VR2 [DT] ☆ R - G = ±3 ☆ B - G = ±3	(17) Adjust VR1 and VR2 on the DT board so that the respective values of B and R are as mentioned below. <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;"> R = within G ± 3 B = within G ± 3 </div> (18) Set S902 to "0" and return S901-4 to OFF after the adjustment.

No.	Item	measuring instrument & Input signal	Mode	Measuring point (◎) Adjustment parts (①) Adjustment level (☆)	Adjustment procedure
-----	------	-------------------------------------	------	---	----------------------

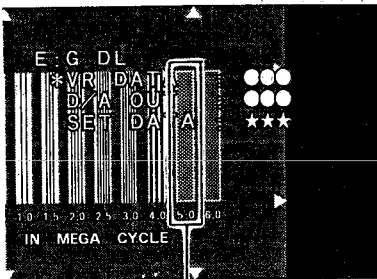
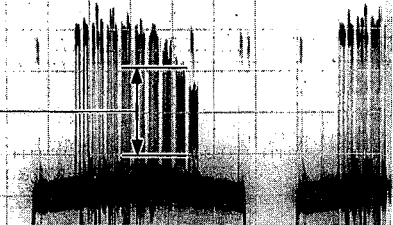
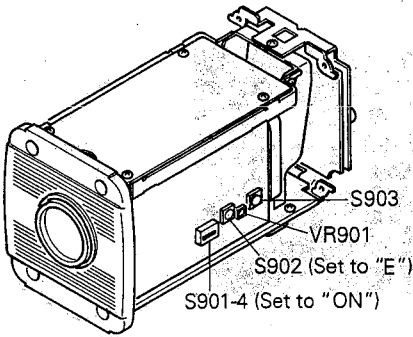
2.8 ADJUSTMENT OF FLARE

1	Flare adjustment	<ul style="list-style-type: none"> • Oscilloscope (H-rate, 10:1) • TV monitor • Gray scale chart (Just scan) 	Adj. mode "C": Rch	◎ VIDEO OUTPUT terminal (75 Ω terminator) ① VR901 [CP]	(1) While shooting the gray scale chart, adjust the lens iris so that the white peak level is 100 IRE (0.7 Vp-p). Then, open the lens iris by one stop. (2) Set S902 on the CP board to "0" and set S901-4 on the same board to ON. (3) Set S902 to "C". (4) Press S903 on the CP board once to make "*" mark appear on the left of "VR DATA" on the display. (5) Adjust VR901 to minimize carrier leak in the black component. (6) Press S903 on the CP board to store the adjustment data in the memory.
			Adj. mode "D": Bch	◎ VIDEO OUTPUT terminal (75 Ω terminator) ① VR901 [CP]	(7) Set S902 to "D". (8) Press S903 on the CP board once to make "*" mark appear on the left of "VR DATA" on the display. (9) Adjust VR901 to minimize carrier leak in the black component. (10) Press S903 on the CP board to store the adjustment data in the memory.
			Adj. mode "C" & "D"	◎ VIDEO OUTPUT terminal (75 Ω terminator) ① VR901 [CP]	(12) Repeat the previous steps (1) through (10) so that carrier leak in the first step of the black of the gray scale is finally minimized (less than 30 mVp-p). (12) Set S902 to "0" and return S901-4 to OFF after adjustment.

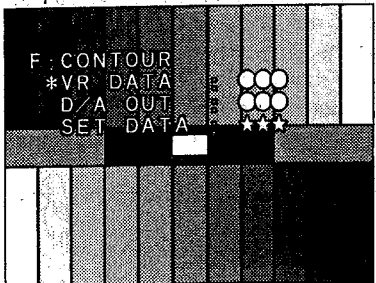
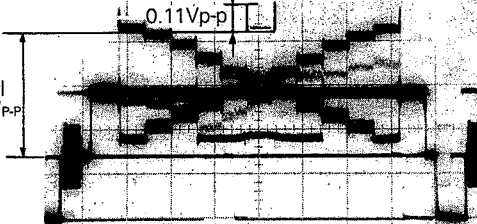
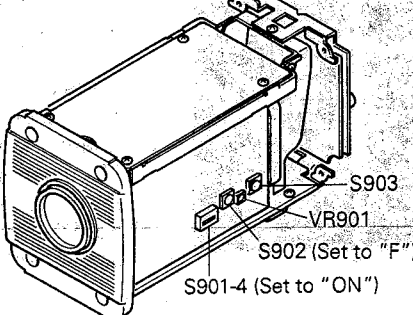


No.	Item	measuring instrument & Input signal	Mode	Measuring point (◎) Adjustment parts (①) Adjustment level (☆)	Adjustment procedure
-----	------	-------------------------------------	------	---	----------------------

2.9 ADJUSTMENT G-ch DELAY

1	G DL adjustment	<ul style="list-style-type: none"> Oscilloscope (H-rate, 10:1) TV monitor In-megacycle chart <p>a level of 5MHz is became maximum (5MHz: second from the right)</p>  <p>shoot the level of 5MHz so that is center of display</p>	Adj. mode "E" ◎ VIDEO OUTPUT terminal (75Ω terminator) ① VR901 [CP]	 	<ol style="list-style-type: none"> While shooting the in-megacycle chart (just scan), set the lens iris so that the peak of 0.5 MHz becomes 0.7V_{P-P} (100%). Set S902 on the CP board to "0" and set S901-4 on the CP board to ON. Set S902 to "E". Press S903 on the CP board once to make "*" mark appear on the left of "VR DATA" on the display. Shoot the in-megacycle chart so that its 5 MHz component is located in the center of the screen. Adjust VR901 to maximize the level of the 5 MHz component. Press S903 to store the adjustment data in the memory. Set S902 to "0" and return S901-4 to OFF after adjustment.
---	-----------------	---	---	--	--

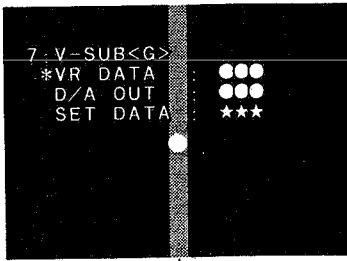
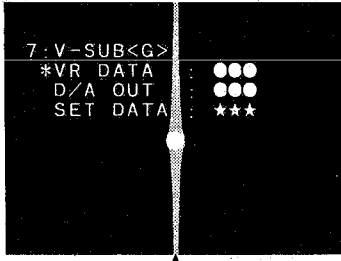
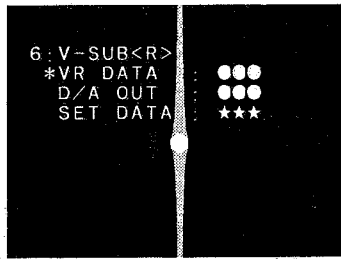
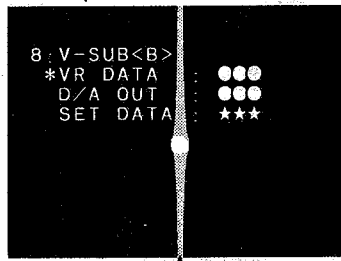
2.10 ADJUSTMENT OF CONTOUR CORRECTOR

1	H.Contour level adjustment	<ul style="list-style-type: none"> Oscilloscope (H-rate, 10:1) TV monitor Gray scale chart (Justscan) <p>set the lens iris so that the level becomes 0.56V_{P-P}</p> 	Adj. mode "F" ◎ VIDEO OUTPUT terminal (75Ω terminator) ① VR901 [CP] ☆ 0.11V _{P-P}	 	<ol style="list-style-type: none"> Set S902 on the CP board to "0" and turn S901-4 on the same board to ON. Set S902 to "F". Press S903 on the CP board once to make "*" mark appear on the left of "VR DATA" on the display. While shooting gray scale chart, set the lens iris so that the white level of window becomes 0.56 V_{P-P} (80 %). Adjust VR901 so that the contour level becomes 0.11V_{P-P}. Press S903 on the CP board to store the adjustment data in the memory. Set S902 to "0" and return S901-4 to OFF after adjustment.
---	----------------------------	---	---	---	--

No.	Item	measuring instrument & Input signal	Mode	Measuring point (◎) Adjustment parts (①) Adjustment level (☆)	Adjustment procedure
-----	------	-------------------------------------	------	---	----------------------


2.11 ADJUSTMENT OF V-sub VOLTAGE

- As for this adjustment, please carry exchange of CCD into effect when they went only.
- As for this adjustment confirm and please find that there is not an abnormality on carrier balance of a picture highlight portion after this adjustment end which respectively has influence on smear and a dynamic range please find that there is no big difference in a carrier of right and left white when a gray scale chart was done a photographic statue by iris over and HI RESO of a near item has changed by ON and OFF.

1	Gch V-sub adjustment	<ul style="list-style-type: none"> • Oscilloscope (H-rate, 10:1) • TV monitor • Vectorscope • Point light source (incandescent lamp of more than 40 W) 	Adj. mode "7"	◎ VIDEO OUTPUT terminal ① VR901 [CP]	(1) Set S902 on the CP board to "0" . (2) Turn S901-4 on the CP board to ON. (3) Set S902 to "7" . (4) Shoot an incandescent lamp. (5) While opening the iris fully, confirm that there is smear in the picture. Note: When black paper or cloth is used as background, smear is easy to see. (6) Press S903 on the CP board once to make "*" mark appear on the left of "VR DATA" on the display. (7) While observing through the monitor screen, set VR901 to a position where the green belt of the smear turns into thin and white. Note: For performing this adjustment with easy, it is recommended to turn VR901 fully counterclock-wise once and then to turn it clockwise gradually. (8) Press S903 on the CP board to store the adjustment data in the memory. (9) Adjust Rich V-sub.
<div style="display: flex; align-items: center; justify-content: space-around;"> <div style="text-align: center;">  <p>Turn the VR901 to left so that smear becomes green.</p> </div> <div style="text-align: center;"> <p>adjust VR901</p>  <p>Adjust green belt to be thin and white.</p> </div> </div>					
2	Rch V-sub adjustment	<ul style="list-style-type: none"> • Oscilloscope (H-rate, 10:1) • TV monitor • Vectorscope • Point light source (incandescent lamp of more than 40 W) 	Adj. mode "6"	◎ VIDEO OUTPUT terminal ① VR901 [CP]	(1) Set S902 to "6" . (2) Press S903 on the CP board once to make "*" mark appear on the left of "VR DATA" on the display. (3) In the same manner as G-ch adjust VR901 so that the smear is reduced and turns into white. (4) Press S903 on the CP board to store the adjustment data in the memory. (5) Adjust Bch V-sub.
<div style="text-align: center;">  <p>Adjust smear so that it is scarce and White.</p> </div>					
3	Bch V-sub adjustment	<ul style="list-style-type: none"> • Oscilloscope (H-rate, 10:1) • TV monitor • Vectorscope • Point light source (incandescent lamp of more than 40 W) 	Adj. mode "8"	◎ VIDEO OUTPUT terminal ① VR901 [CP]	(1) Set S902 to "8" . (2) Press S903 on the CP board once to make "*" mark appear on the left of "VR DATA" on the display. (3) In the same manner as G-ch adjust VR901 so that the smear is reduced and turns into white. (4) Press S903 on the CP board to store the adjustment data in the memory. (5) Change the adjustment mode to "7", "6" and "8" one after another to confirm that the smear is not increasing and still uncolored. (6) Set S902 to "0" and return S901-4 to OFF after adjustment.
<div style="text-align: center;">  <p>Adjust smear so that it is scarce and White.</p> </div>					

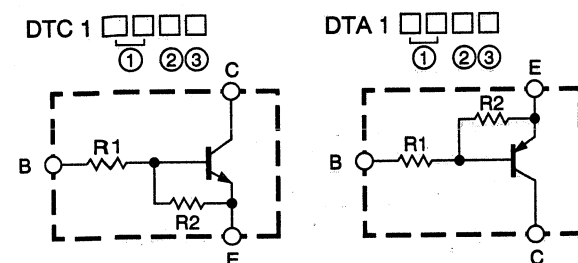
SECTION 3 CHARTS AND DIAGRAMS

■ SCHEMATIC DIAGRAM NOTES

- **Schematic safety precaution**
 Parts are safety related parts.
 When replacing them, be sure to use the specified parts.
- **Voltage and waveform measurements.**
 Voltage : Measured with digital voltmeter in DC range; iris closed.
 Waveform : Grey scale illuminated at more than 4000 lux at 3200 K lighting.

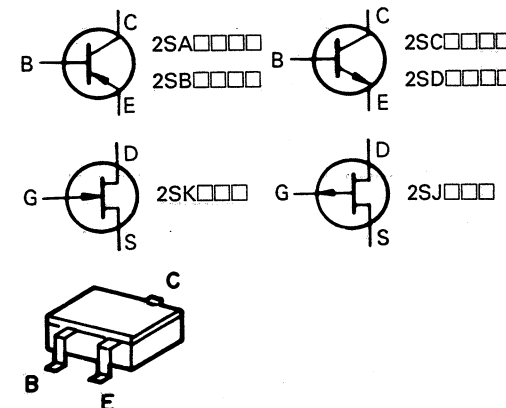
- **Terminal logic**
 Top bar of terminal name show input or output logic.
 Top bar shows, the control circuit become active at negative (low) logic input for example.

- **Digital transistors**



- ① Number in these two places expresses the ohmage of R1 in abbreviation.
 43 : 4.7kΩ
 14 : 10 kΩ
 24 : 22 kΩ
 44 : 47 kΩ
- ② Roman letter in the place expresses the resistive ratio between R1 and R2 in abbreviation.
 E : R2/R1 = 1/1
 Y : R2/R1 = 5/1
 W : R2/R1 = 2/1
 X : R2/R1 = 1/2
 T : R2 is opened.
- ③ Symbol in this place expresses the shape of resistor in abbreviation.

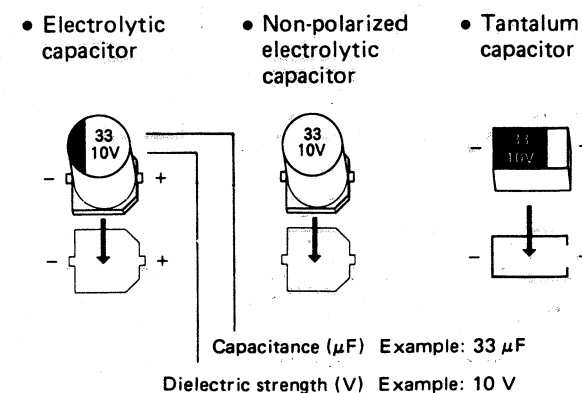
- Transistors and F.E.T.s are:



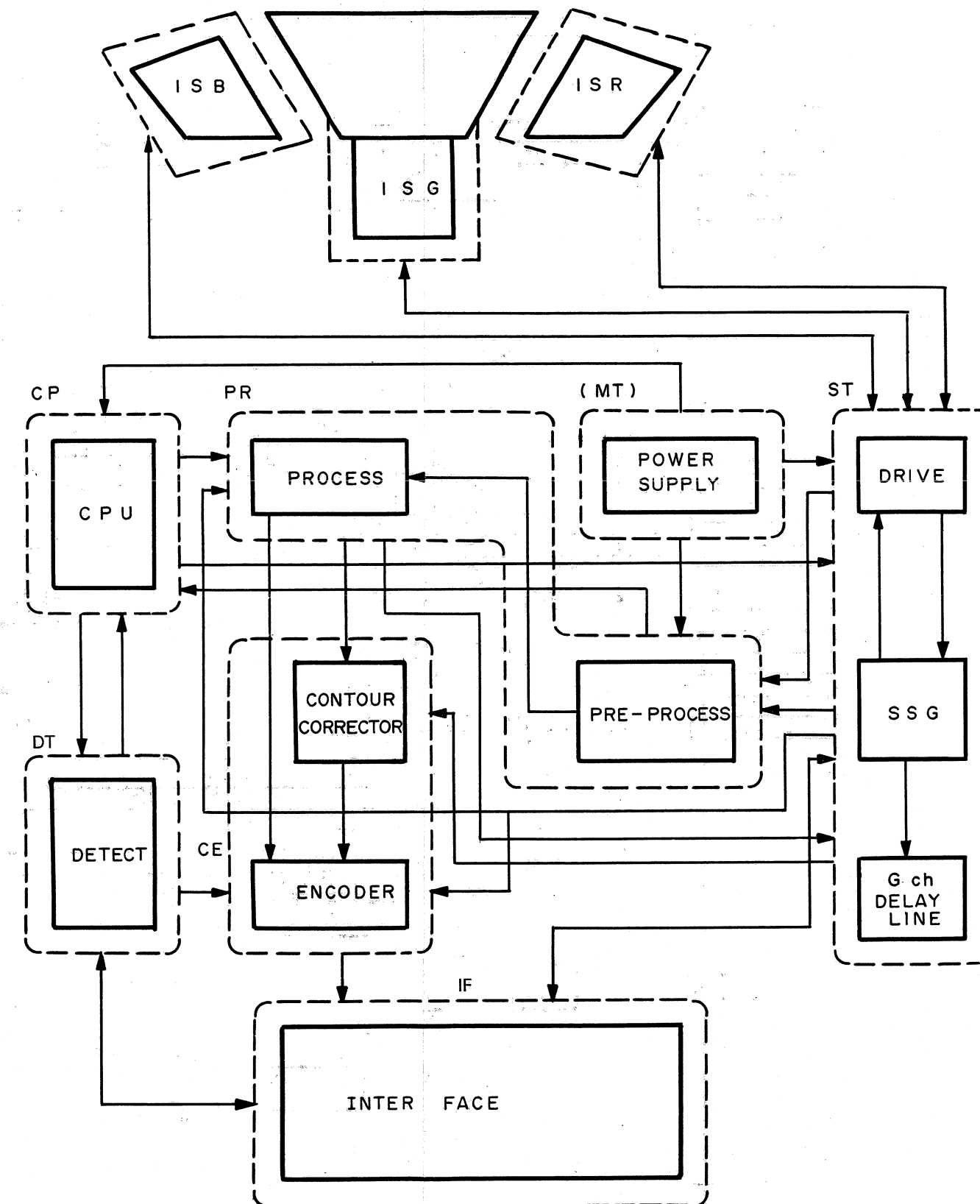
- Definition of the (A) and the (B) or circuit boards diagrams
 (A) : Side on which discrete parts are assembled
 (B) : Side on which only chip parts are assembled.

■ REPLACING SUBMINIATURE "CHIP" PARTS

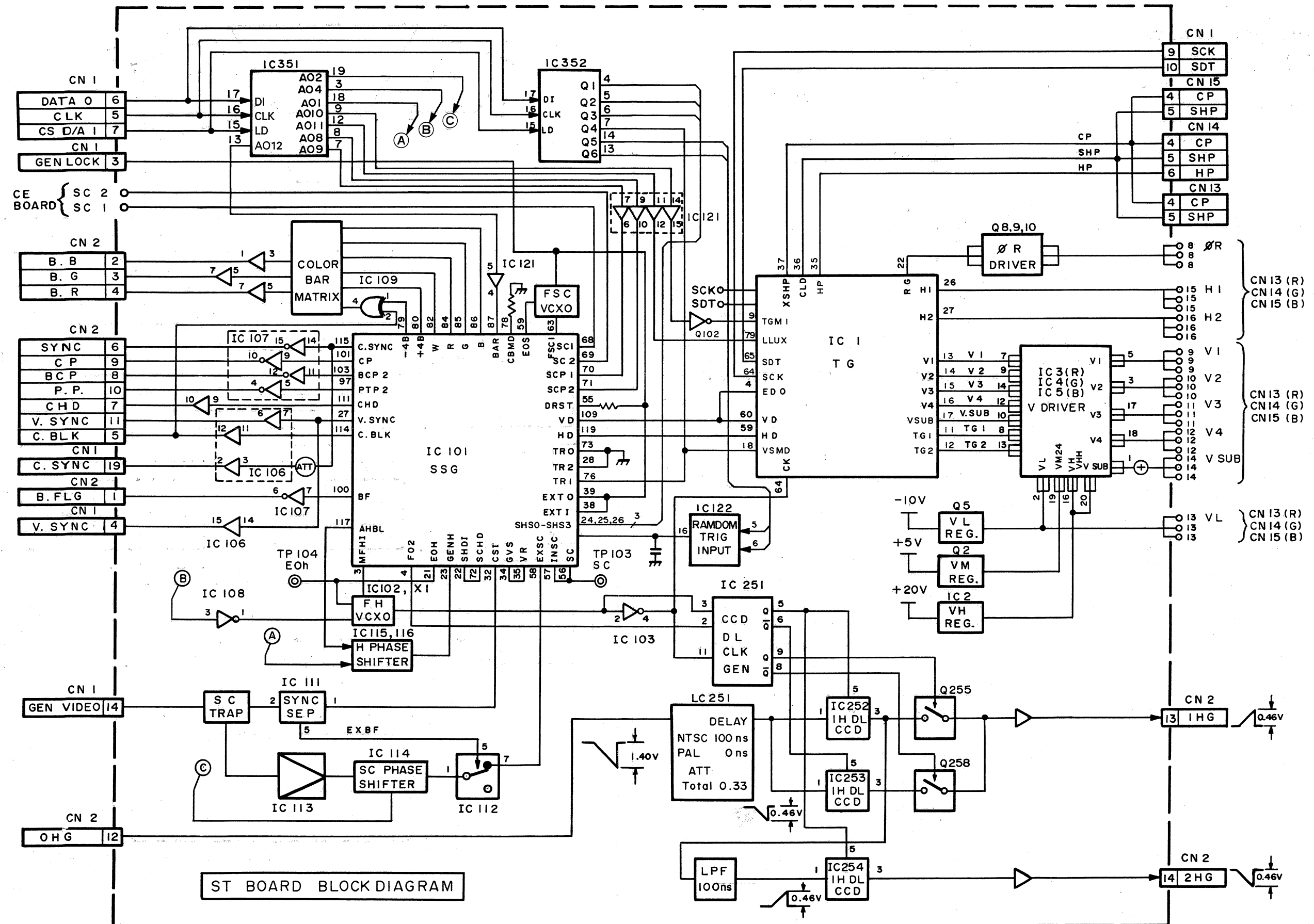
- Some resistors, shorting jumpers (0 Ω resistance), ceramic capacitors, transistors, and diodes are chip parts. These chip parts cannot be reused after they are once removed.
- Chip resistors used in some circuits are of high precision type having little error in resistance.
 To demonstrate the full capacity of this camera head, place an order for proper parts referring to the diagrams and parts lists in the sections 5.
- Soldering cautions:
 - 1) Do not apply heat for more than 3 seconds.
 - 2) Avoid using a rubbing stroke when soldering.
 - 3) Discard removed chips; do not reuse them.
 - 4) Supplementary cementing is not required.
 - 5) Use care not to scratch or otherwise damage the chips.
- Polarities of chip electrolytic capacitors and chip tantalum capacitors used in this model are as illustrated below.
 Polarities indicated by silk-screen printing on circuit boards are also shown below. When replacing such parts, make sure of polarities.



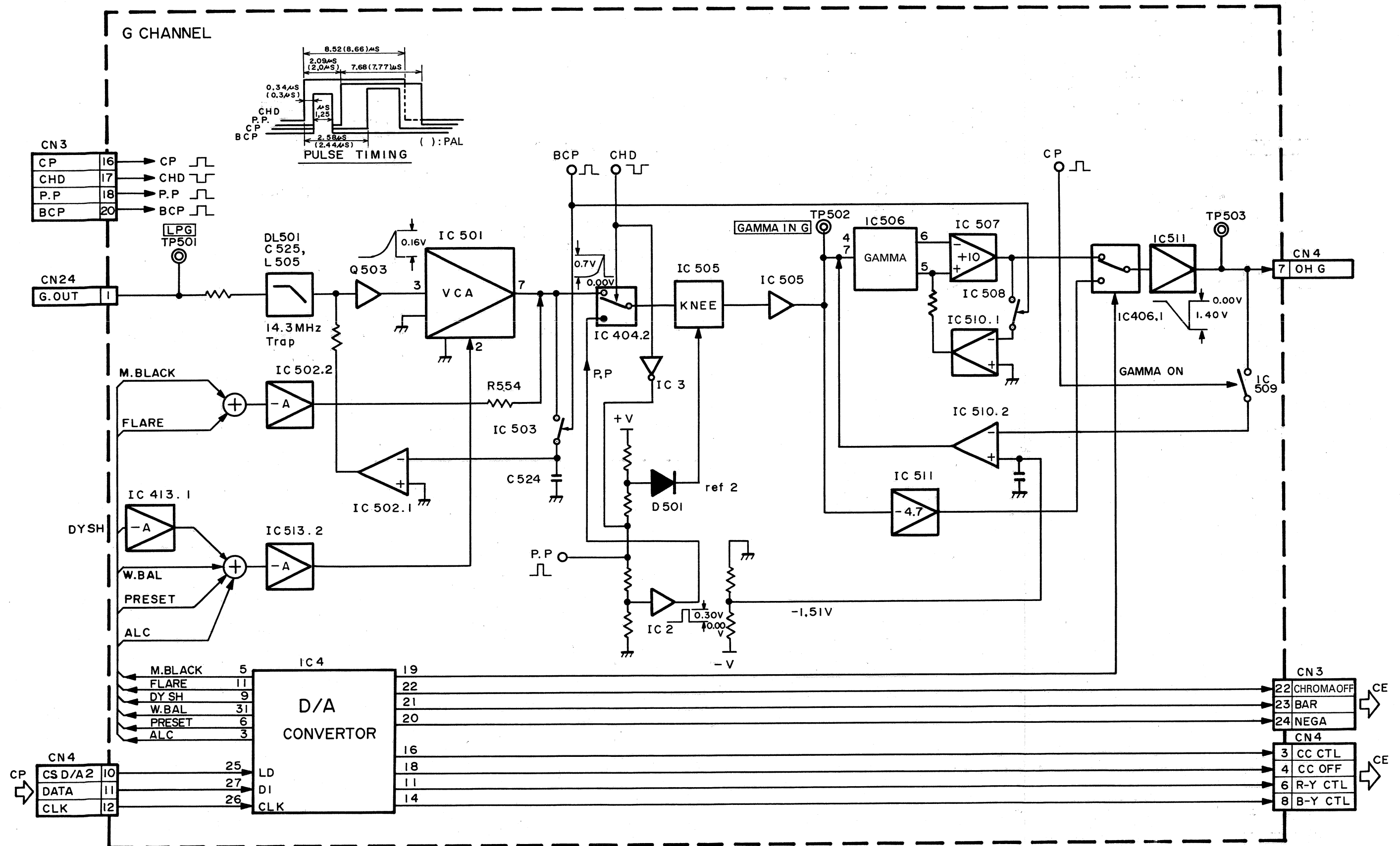
3.1 OVERALL BLOCK DIAGRAM



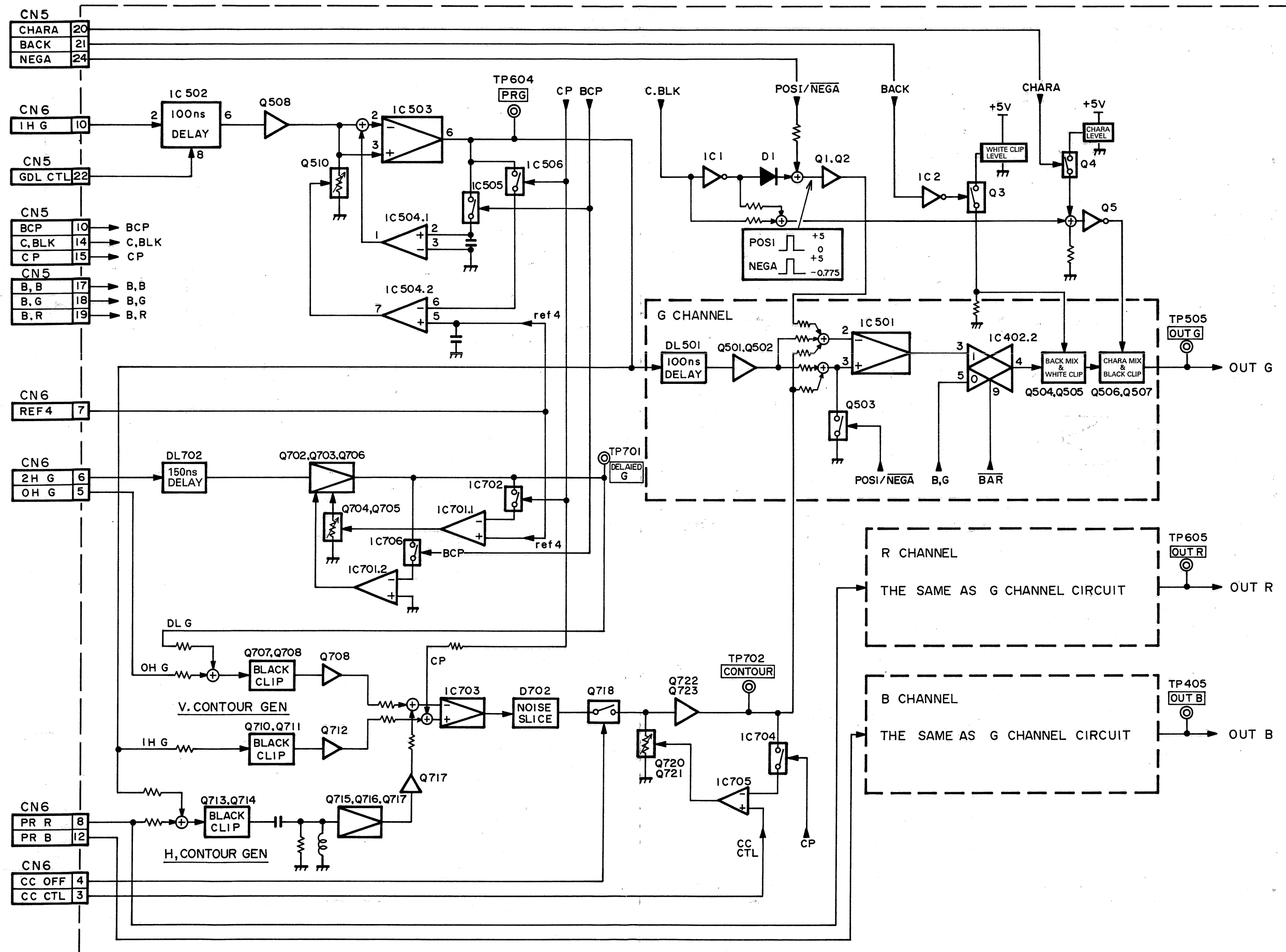
3.2 ST BOARD BLOCK DIAGRAM



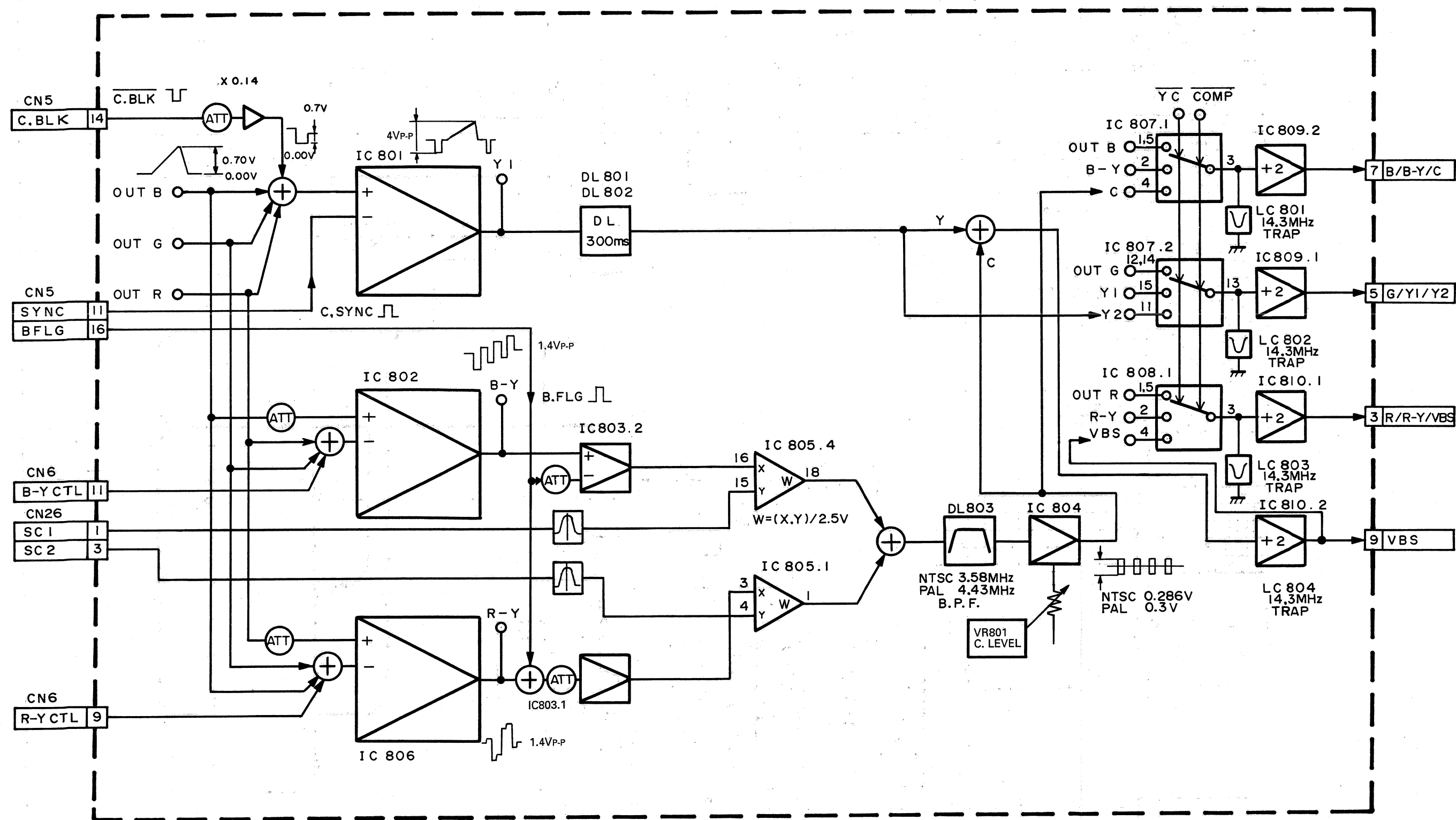
3.3 PR BOARD BLOCK DIAGRAM



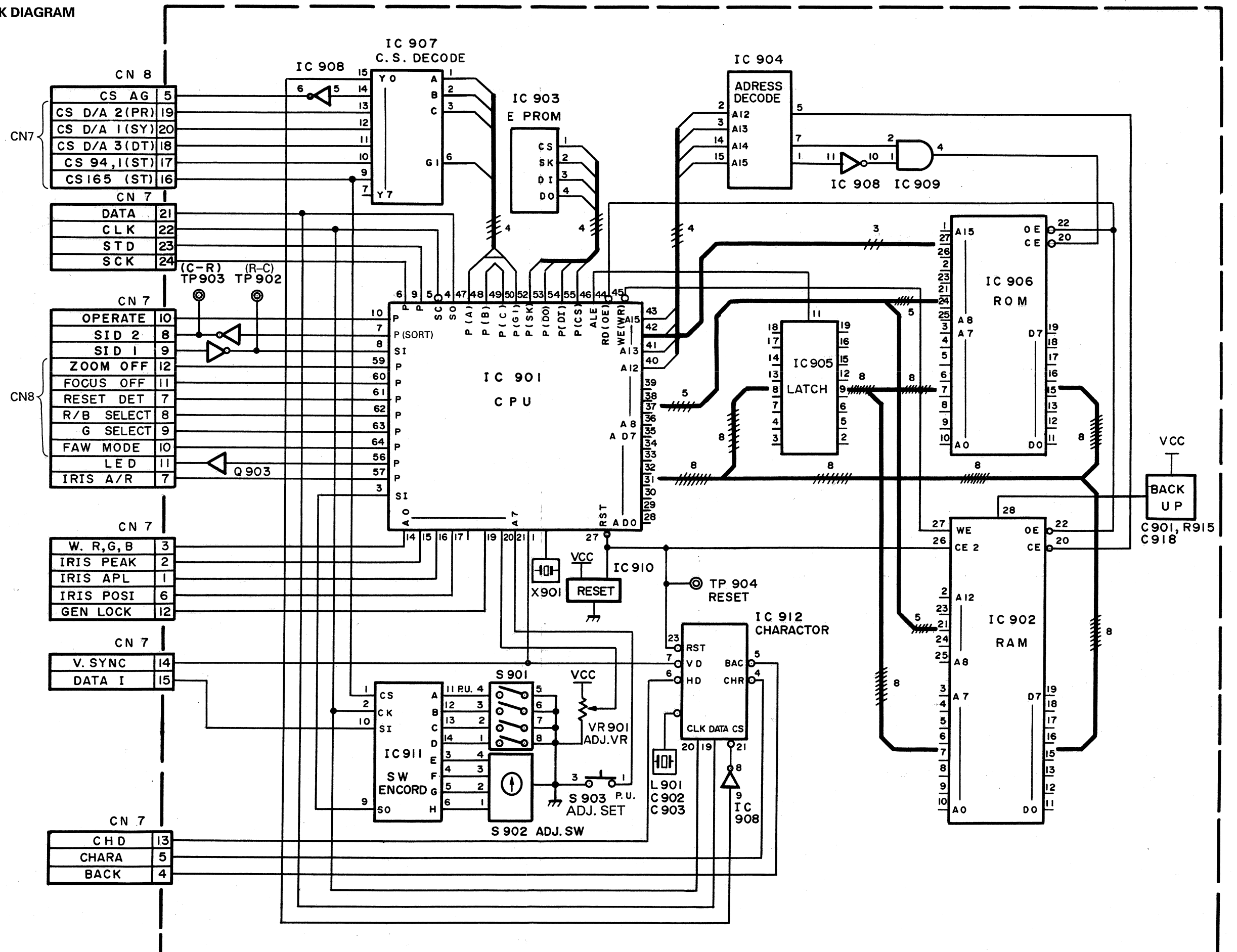
3.4 CE BOARD BLOCK DIAGRAM (1/2)



■ CE BOARD BLOCK DIAGRAM (2/2)

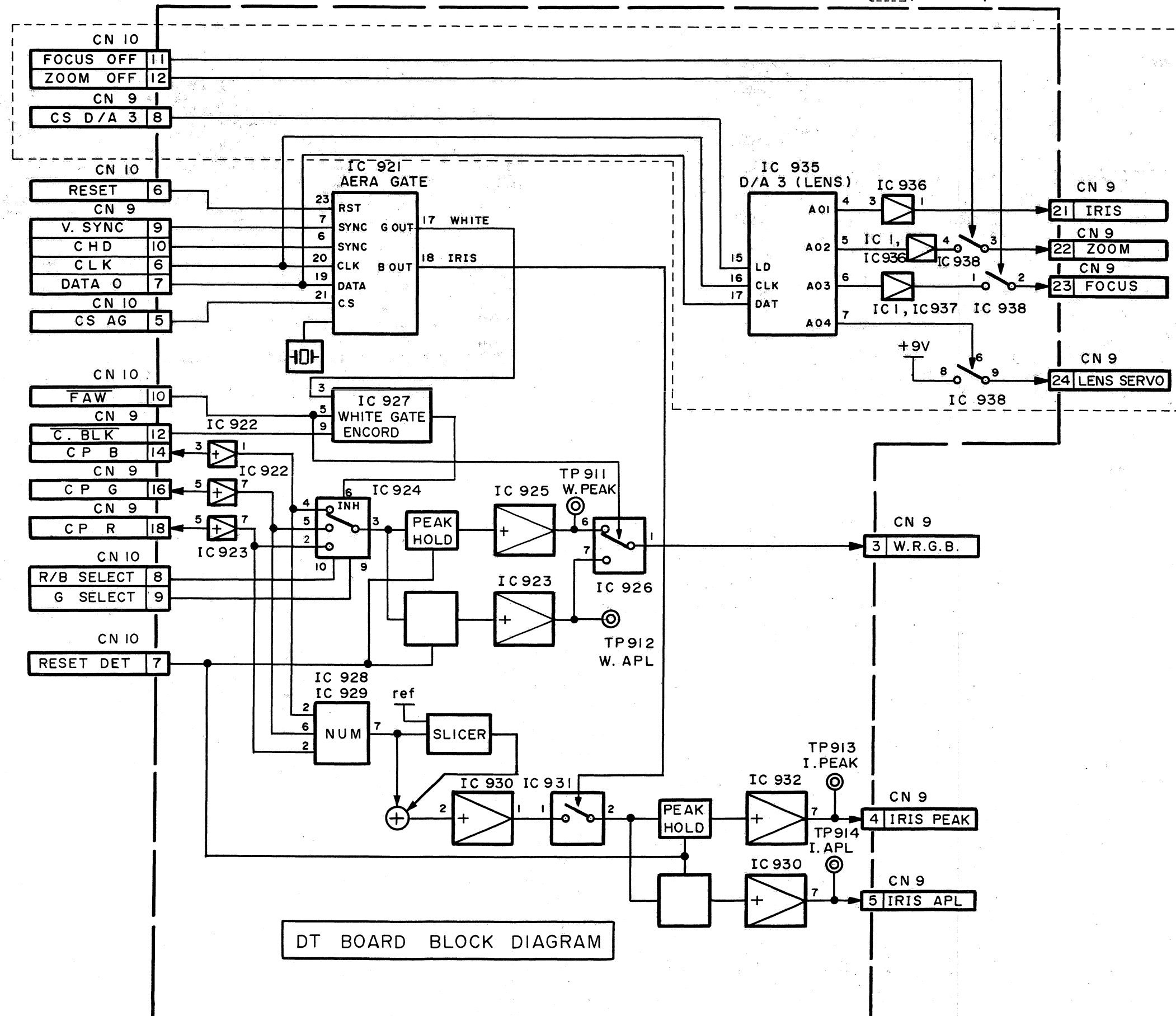


3.5 CP BOARD BLOCK DIAGRAM



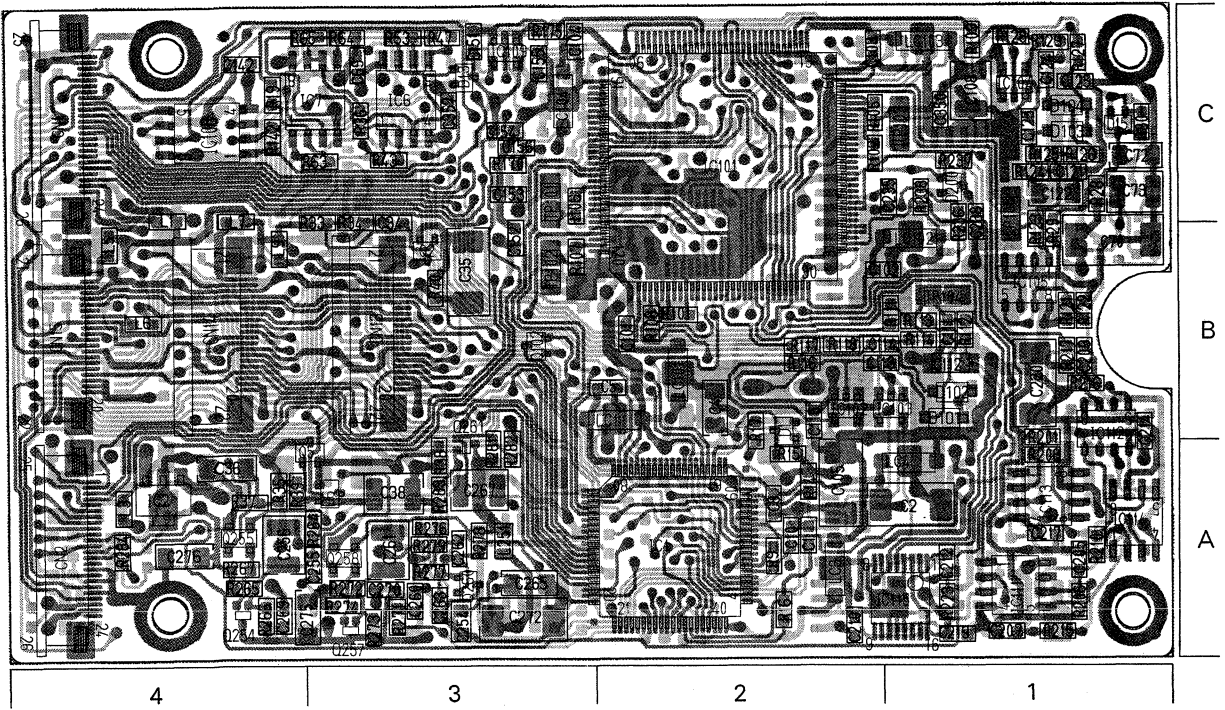
3.6 DT BOARD BLOCK DIAGRAM

Note : Show in parts are open circuit.

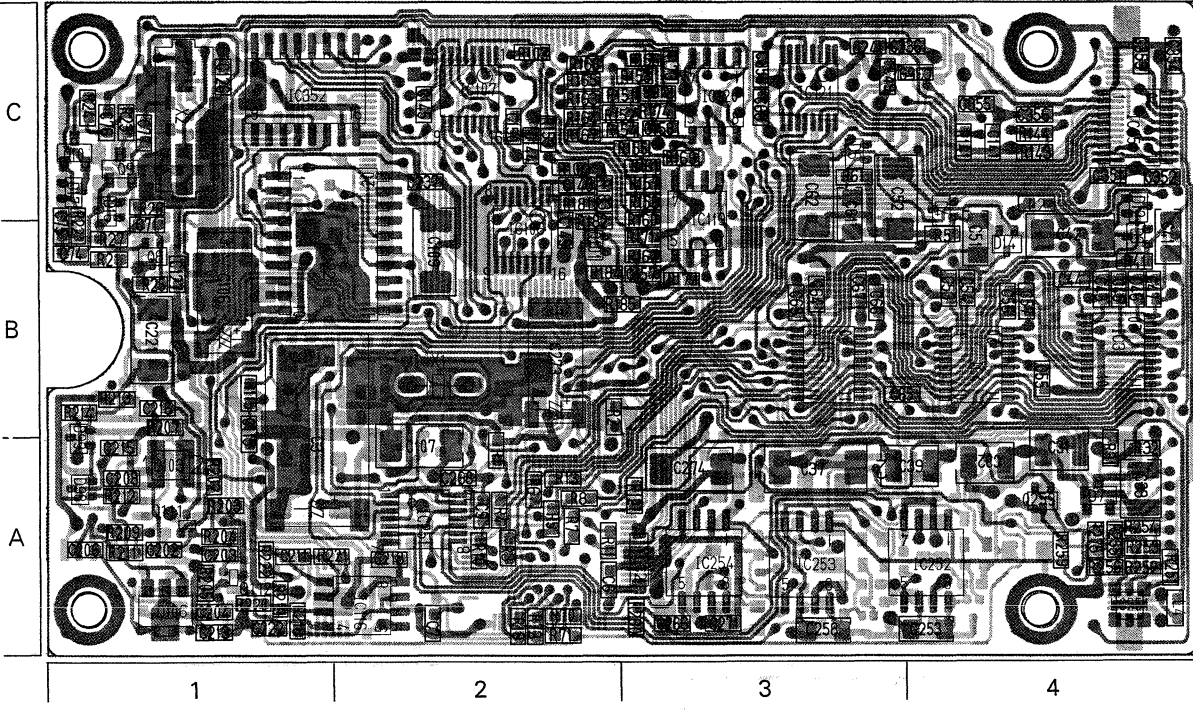


3.7 ST CIRCUIT BOARD

- Side A -

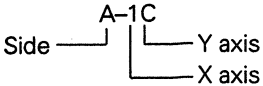


- Side B -

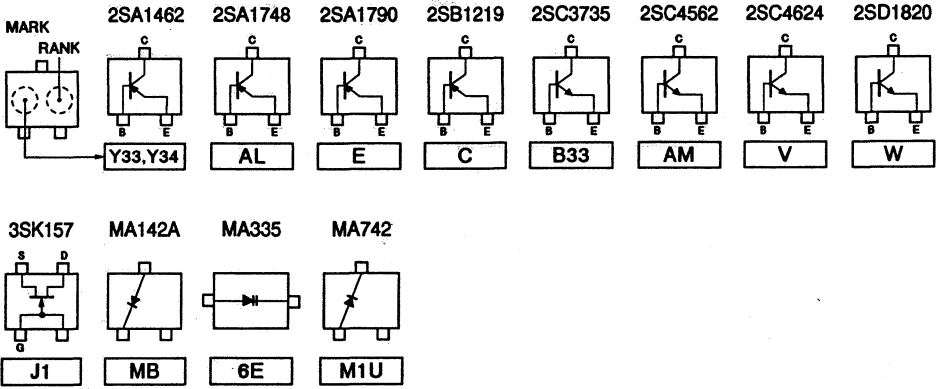


● ADDRESS TABLE OF BOARD PARTS

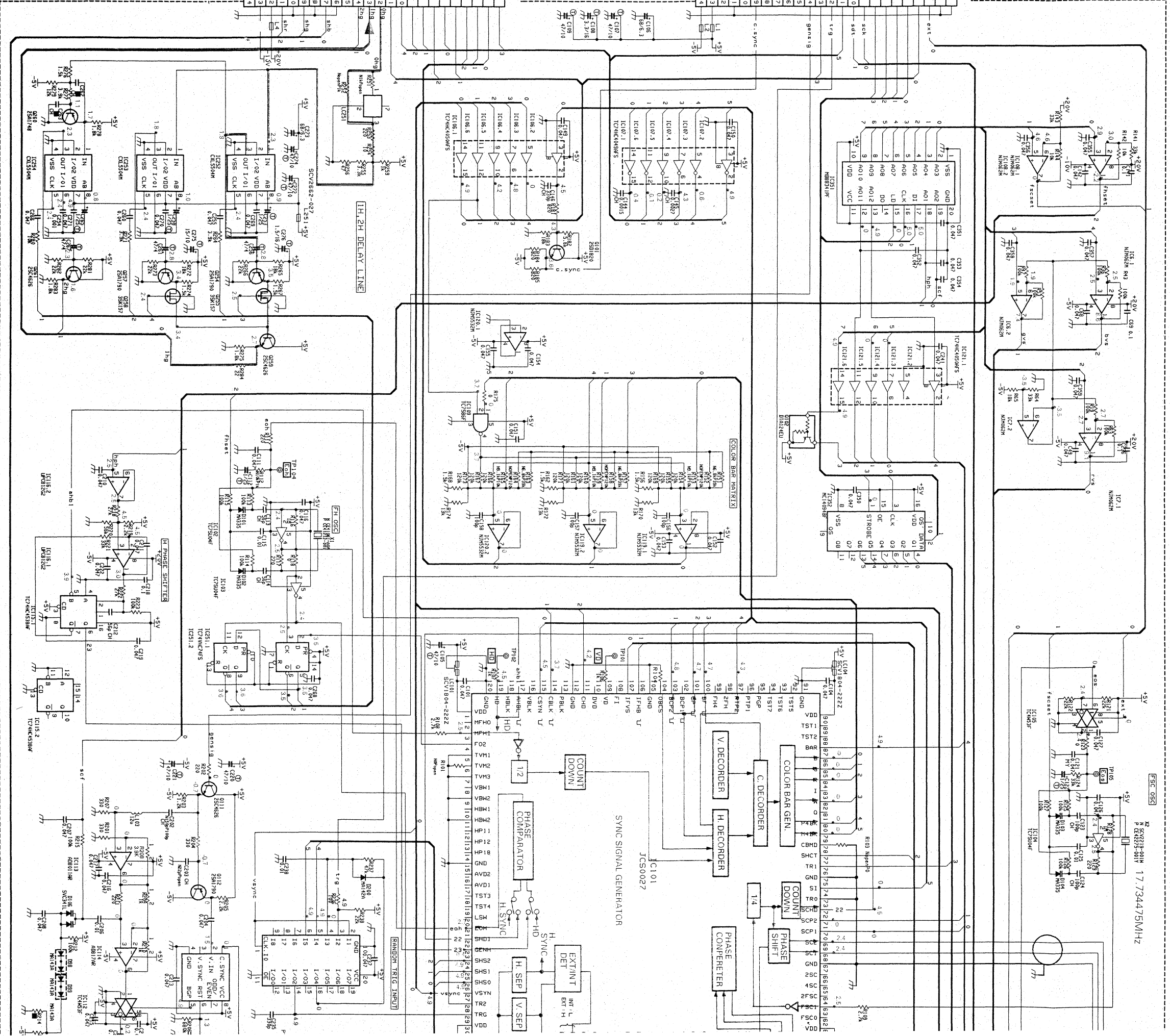
Each address may have an address error by one interval.

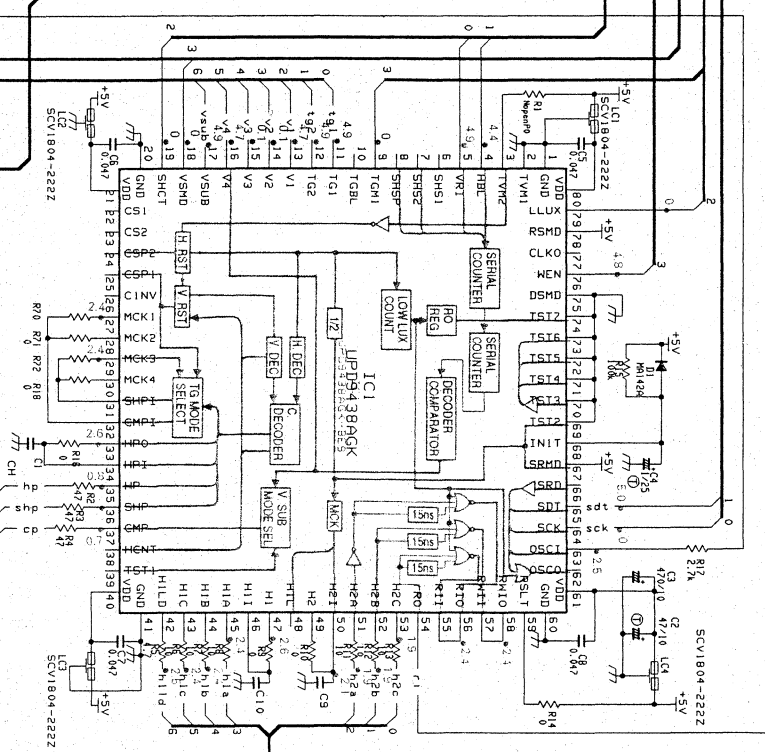
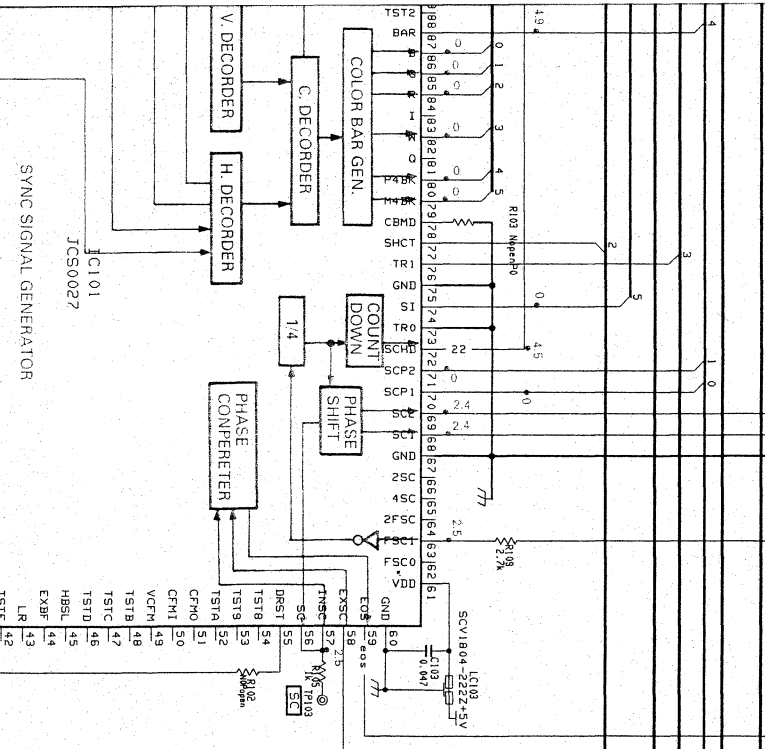
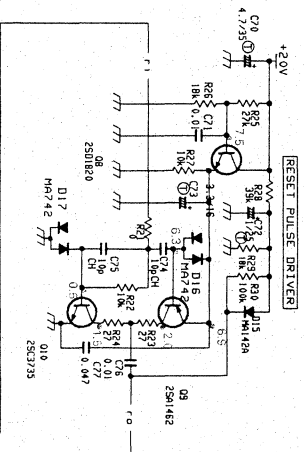
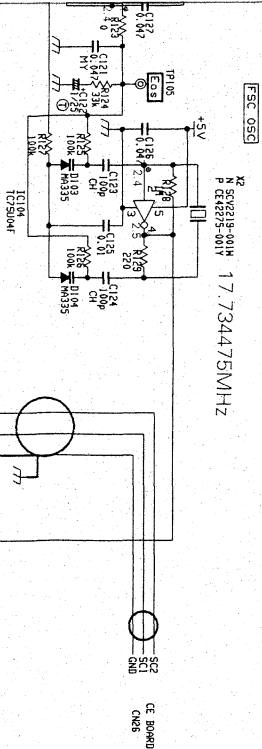


IC1	A-2A	D1	A-2B	R31	B-4A	R143	B-4C	R219	B-1A	C37	B-3A	C121	A-1C	C255	A-3A	CN14	A-4B
IC2	A-4A	D3	B-4B	R32	B-4A	R144	B-4C	R220	B-1A	C38	A-3A	C122	A-1C	C256	A-4A	CN15	A-4B
IC3	B-4B	D4	B-4C	R33	A-3C	R151	B-3C	R221	B-2A	C39	B-4A	C123	A-1C	C258	B-3A		
IC4	B-4B	D5	B-3C	R34	A-3C	R152	B-3C	R222	B-1A	C41	B-4B	C124	A-1C	C260	A-3A	LC1	A-2B
IC5	B-3B	D6	A-3A	R35	A-4A	R153	B-3C	R223	A-1A	C42	B-4B	C125	A-1C	C261	A-3A	LC2	B-3A
IC6	A-3C	D7	B-4A	R36	A-3C	R154	B-3C	R236	A-1B	C43	B-4B	C126	B-1C	C262	A-3A	LC3	A-2A
IC7	A-4C	D12	B-4C	R37	A-4A	R155	B-3C	R237	A-1C	C44	B-4B	C127	B-1B	C263	A-3A	LC4	A-1A
IC101	A-2C	D13	A-3C	R38	A-3A	R156	B-3C	R238	A-1C	C45	B-4B	C141	B-4C	C265	A-3A	LC101	A-2B
IC102	A-2B	D14	B-4B	R39	A-4A	R157	B-3C	R251	B-4A	C46	B-4B	C142	A-4C	C266	B-3A	LC102	A-1B
IC103	A-2B	D15	A-1C	R40	A-3B	R158	B-3C	R252	B-4A	C47	B-4B	C144	B-2C	C267	A-3A	LC103	A-1C
IC104	A-1C	D16	B-1C	R41	B-4B	R159	B-2C	R253	B-4A	C49	B-3C	C145	B-2C	C268	B-2A	LC104	A-3C
IC105	A-1B	D17	B-1C	R43	A-3C	R160	B-3B	R254	B-4A	C51	B-4B	C146	B-2C	C269	A-4A	LC251	B-4A
IC106	B-2B	D98	B-1A	R47	A-3C	R161	B-3C	R255	B-4A	C52	B-3C	C149	B-2B	C270	A-3A		
IC107	B-2C	D99	B-1A	R51	B-4B	R162	B-3B	R256	B-4A	C53	B-4B	C150	B-2C	C271	B-3A		
IC108	A-4C	D101	A-1B	R53	A-3C	R163	B-2C	R259	B-4A	C54	B-4B	C151	A-3C	C272	A-3A		
IC109	A-3C	D102	A-1B	R61	B-3C	R164	B-2C	R264	A-3A	C55	B-4B	C152	A-3B	C273	B-2B		
IC111	A-1A	D103	A-1C	R63	A-3C	R165	B-2C	R265	A-4A	C56	B-4B	C153	A-3C	C274	B-3A		
IC112	A-1B	D104	A-1C	R64	A-3C	R166	B-2C	R266	A-4A	C57	B-4B	C154	A-3C	C275	A-4A		
IC113	A-1A	D106	B-1A	R65	A-3C	R167	B-2C	R267	A-4A	C61	B-3C	C155	A-3C	C276	A-4A		
IC114	A-1A	D200	A-1C	R70	B-2A	R168	B-3C	R271	A-3A	C62	B-3C	C156	A-3C	C350	A-1C		
IC115	A-1A			R71	B-2A	R169	B-3C	R272	A-3A	C63	B-3B	C157	B-3B	C351	B-4C		
IC116	B-2A	R1	B-2A	R72	B-2A	R170	A-3C	R273	A-3A	C64	B-3B	C158	B-3C	C352	B-4C		
IC119	B-3B	R2	B-2B	R101	A-2B	R171	B-3B	R274	A-3A	C65	B-3B	C202	B-1A	C353	B-4C		
IC120	B-3C	R3	B-2A	R102	A-2C	R172	B-3B	R275	B-4A	C66	B-3B	C203	B-1A	C354	B-4C		
IC121	B-3C	R4	B-2A	R103	B-2C	R173	B-3C	R276	A-3A	C67	B-3B	C204	B-1A	C355	B-4C		
IC122	B-2C	R5	B-2A	R104	B-2C	R174	B-3C	R277	A-3A	C68	B-3C	C205	A-1A	C356	B-4C		
IC251	B-2A	R6	B-2A	R105	A-2C	R175	A-3C	R278	A-3A	C69	A-3C	C206	B-1A	C357	A-3C		
IC252	B-4A	R7	B-2A	R106	A-3C	R181	B-2C	R279	B-3A	C70	A-1B	C207	A-1A	C358	B-3C		
IC253	B-3A	R8	B-2A	R107	A-3B	R182	B-2B	R280	A-3A	C71	A-1C	C208	B-1A	C359	B-4C		
IC254	B-3A	R9	A-2A	R108	A-2B	R183	B-2C	R281	A-3A	C72	A-1C	C210	A-2A	L1	A-4C		
IC351	B-4C	R10	B-2A	R109	A-1C	R184	B-2B	R282	A-3A	C73	B-1B	C211	B-1A	L2	B-4C		
IC352	B-2C	R11	B-2A	R111	A-2B	R185	B-3B	R283	A-3A	C74	B-1B	C212	A-1A	L3	A-4A		
		R12	B-3A	R112	A-1B	R201	A-1A	R284	A-4A	C75	B-1C	C213	B-1A	L4	B-4A		
		R13	B-2A	R113	A-1B	R202	B-1A			C76	B-1C	C214	A-1A	L5	A-4B		
Q2	A-3B	R14	A-1B	R114	A-1B	R203	B-1A	C1	A-2A	C77	B-1C	C215	B-1A	L6	A-4B		
Q5	A-3A	R15	A-2A	R115	B-1B	R204	B-1A	C2	A-1A	C101	A-2B	C216	B-1B	L7	A-4C		
Q8	B-1B	R16	A-2A	R116	A-2B	R205	B-1A	C3	B-1B	C102	A-2C	C217	A-1A	L8	A-4B		
Q9	B-1C	R17	A-2B	R117	A-2B	R206	A-1A	C4	A-2B	C103	A-2C	C218	B-2A	L9	A-4B		
Q10	B-1C	R18	B-2A	R118	A-2B	R207	B-1B	C5	A-2B	C104	A-3C	C219	A-1A	L103	B-1A		
Q101	B-2B	R19	A-4C	R121	A-1B	R208	A-1A	C6	B-2A	C105	A-2A	C220	A-1B	L251	A-3A		
Q102	A-3B	R21	B-1B	R122	A-1B	R209	B-1A	C7	B-2A	C106	B-1B						
Q111	B-1A	R22	B-1B	R123	A-1B	R210	A-1A	C8	A-2A	C107	B-2A	C221	B-1B	TP101	A-3C		
Q112	B-1A	R23	B-1C	R124	A-1C	R211	B-1A	C9	B-2A	C108	A-1C	C222	B-1A	TP102	A-3B		
Q254	A-4A	R24	B-1C	R125	A-1C	R212	B-1A	C10	A-2A	C109	B-2B	C235	A-2C	TP103	A-1C		
Q255	A-4A	R25	B-1B	R126	A-1C	R213	B-1B	C31	B-4A	C111	A-1B	C236	B-4C	TP104	A-1B		
Q257	A-3A	R26	B-1C	R127	A-1C	R214	B-1B	C32	B-4A	C112	A-1B	C237	B-2C	TP105	A-1C		
Q258	A-3A	R27	B-1B	R128	A-1C	R215	A-1A	C33	B-4A	C113	A-2B	C238	A-1B				
Q259	B-4A	R28	A-1C	R129	A-1C	R216	A-1B	C34	A-3C	C114	A-2B	C241	B-3C	CN1	A-4C		
Q260	A-3A	R29	A-1B	R141	B-4C	R217	A-1B	C35	A-3B	C115	B-1A	C253	B-4A	CN2	A-4A		
Q261	A-3A	R30	A-1C	R142	A-4C	R218	B-1A	C36	A-4A	C116	A-2B	C254	A-3A	CN13	A-3B		



01





To ISG board
CN15

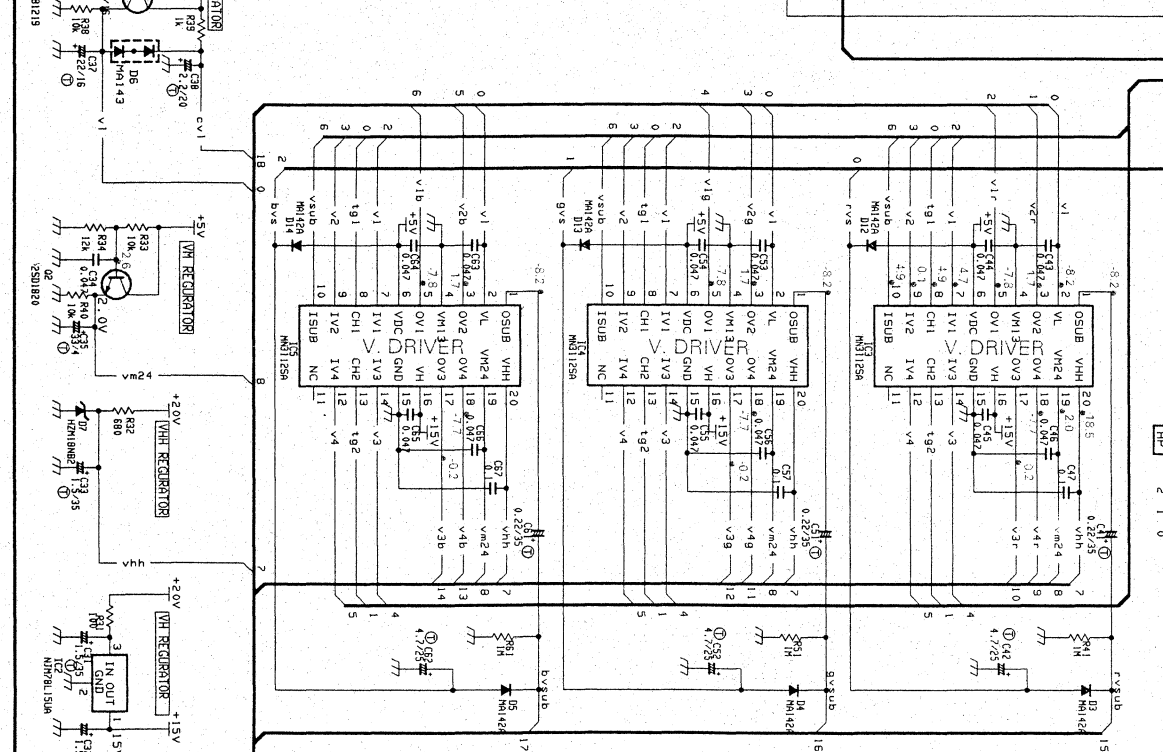
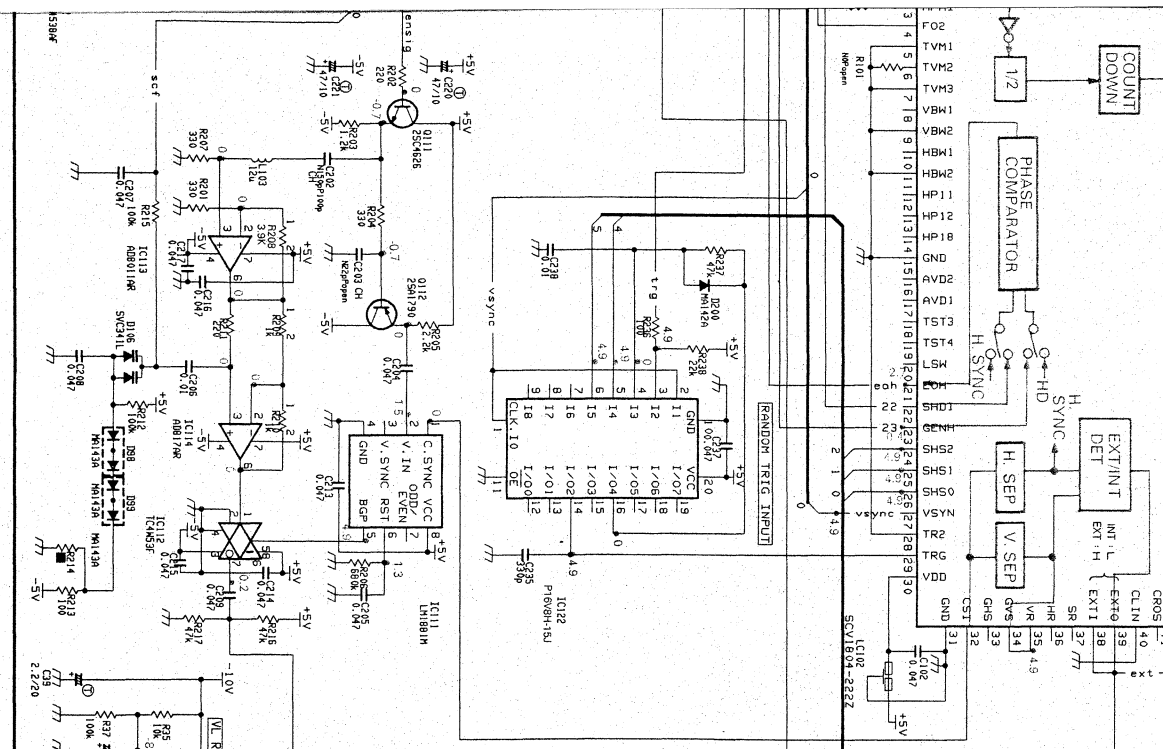
1	+5V
2	S/H R I
3	A, GND
4	CP
5	SHP
6	+15V
7	h10
8	h11
9	h12
10	h13
11	h14
12	h15
13	h16
14	h17
15	h18
16	h19
17	h20
18	h21
19	h22
20	GND

To ISG board

1	+5V
2	S/H R I
3	A, GND
4	CP
5	SHP
6	+15V
7	h10
8	h11
9	h12
10	h13
11	h14
12	h15
13	h16
14	h17
15	h18
16	h19
17	h20
18	h21
19	h22
20	GND

To ISB board
CN13

1	+5V
2	S/H R I
3	A, GND
4	CP
5	SHP
6	+15V
7	h10
8	h11
9	h12
10	h13
11	h14
12	h15
13	h16
14	h17
15	h18
16	h19
17	h20
18	h21
19	h22
20	GND

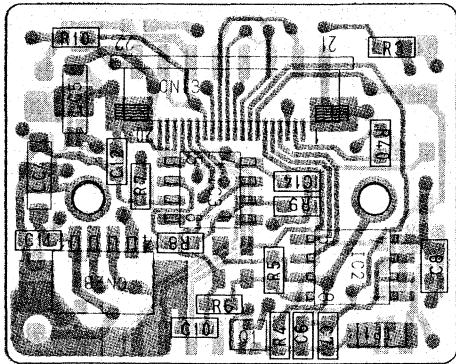


91126

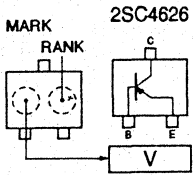
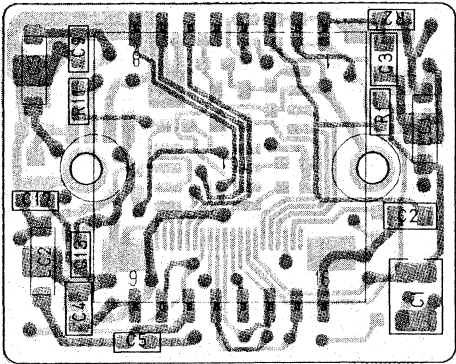
3.9 ISB/ISG/ISR CIRCUIT BOARD

● ISB board

- Side A -

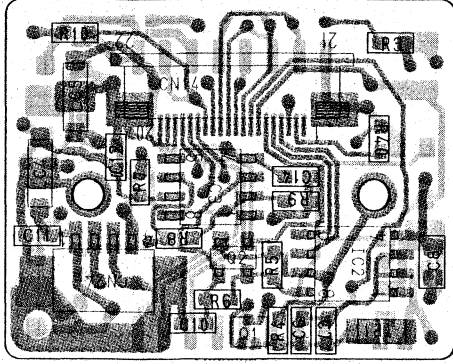


- Side B -

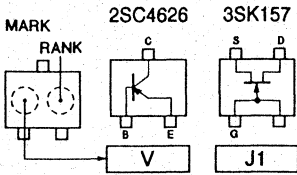
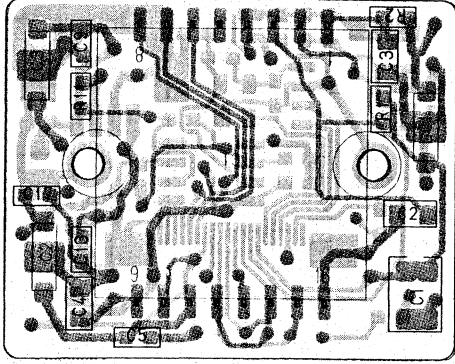


● ISG board

- Side A -

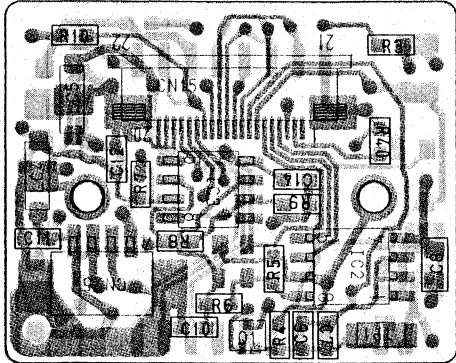


- Side B -

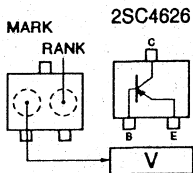
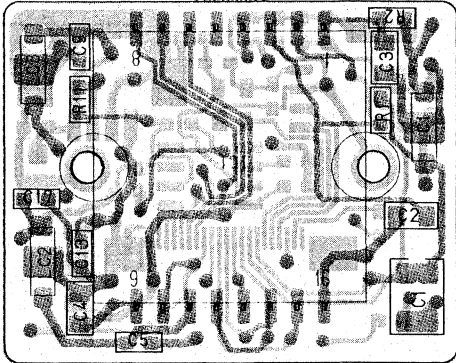


● ISR board

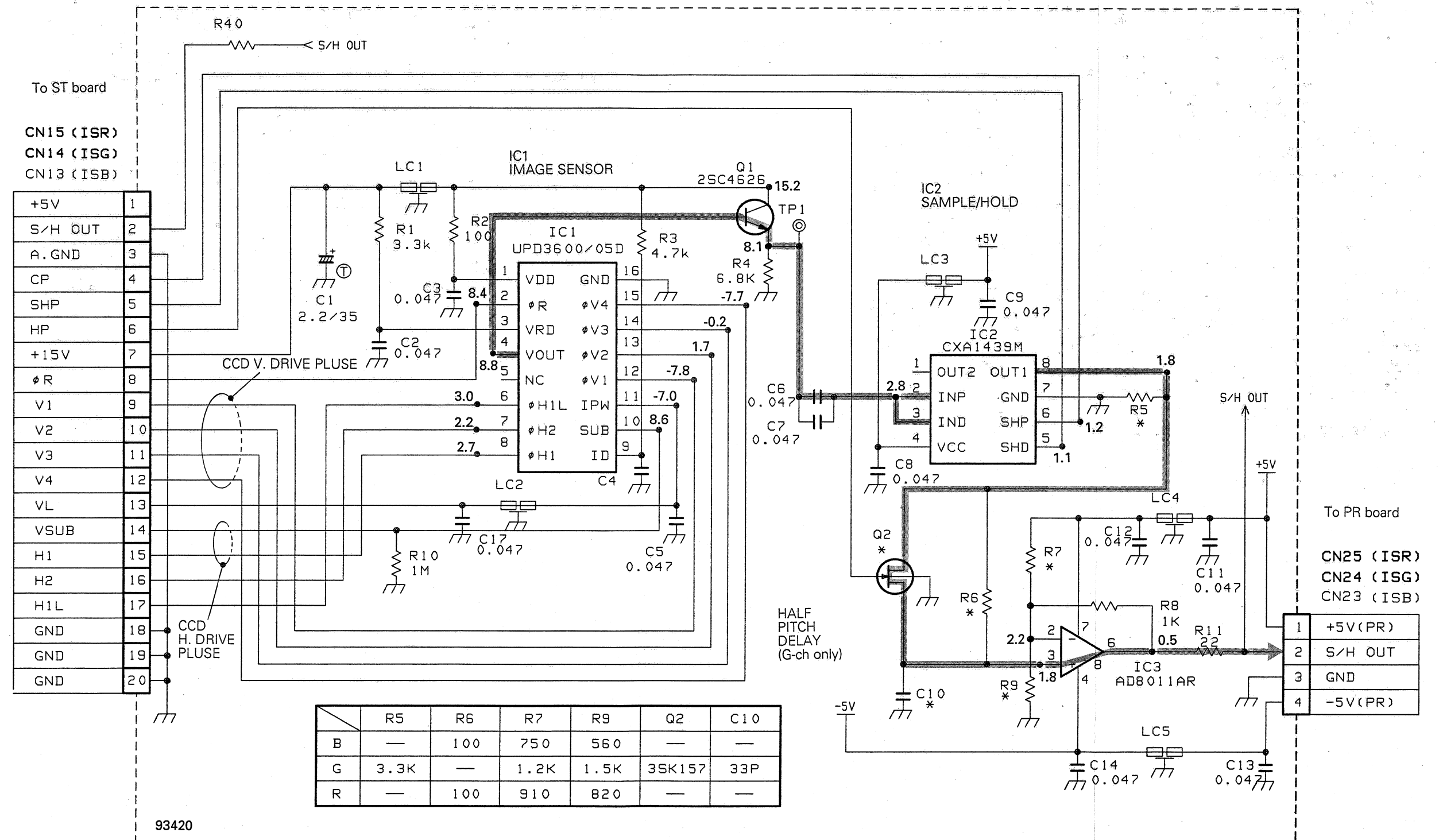
- Side A -



- Side B -

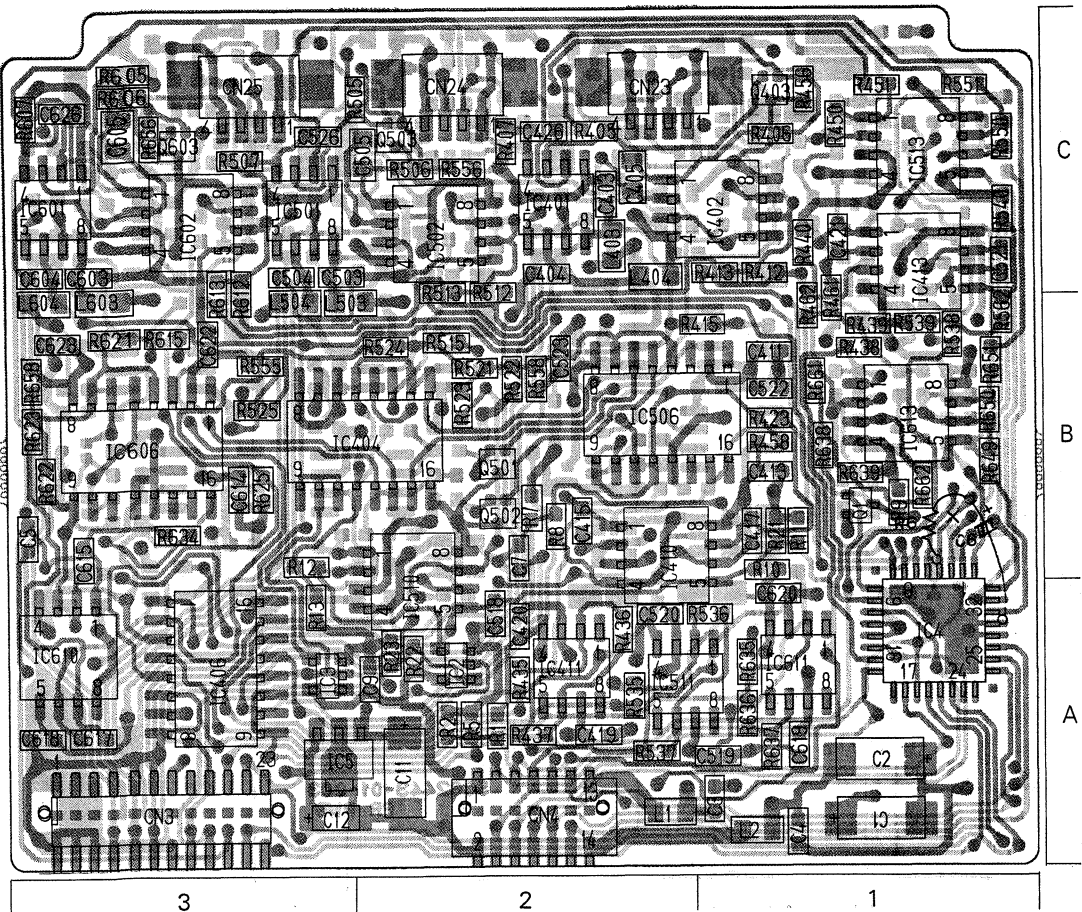


3.10 ISB/ISG/ISR BOARD SCHEMATIC DIAGRAM 02/03/04

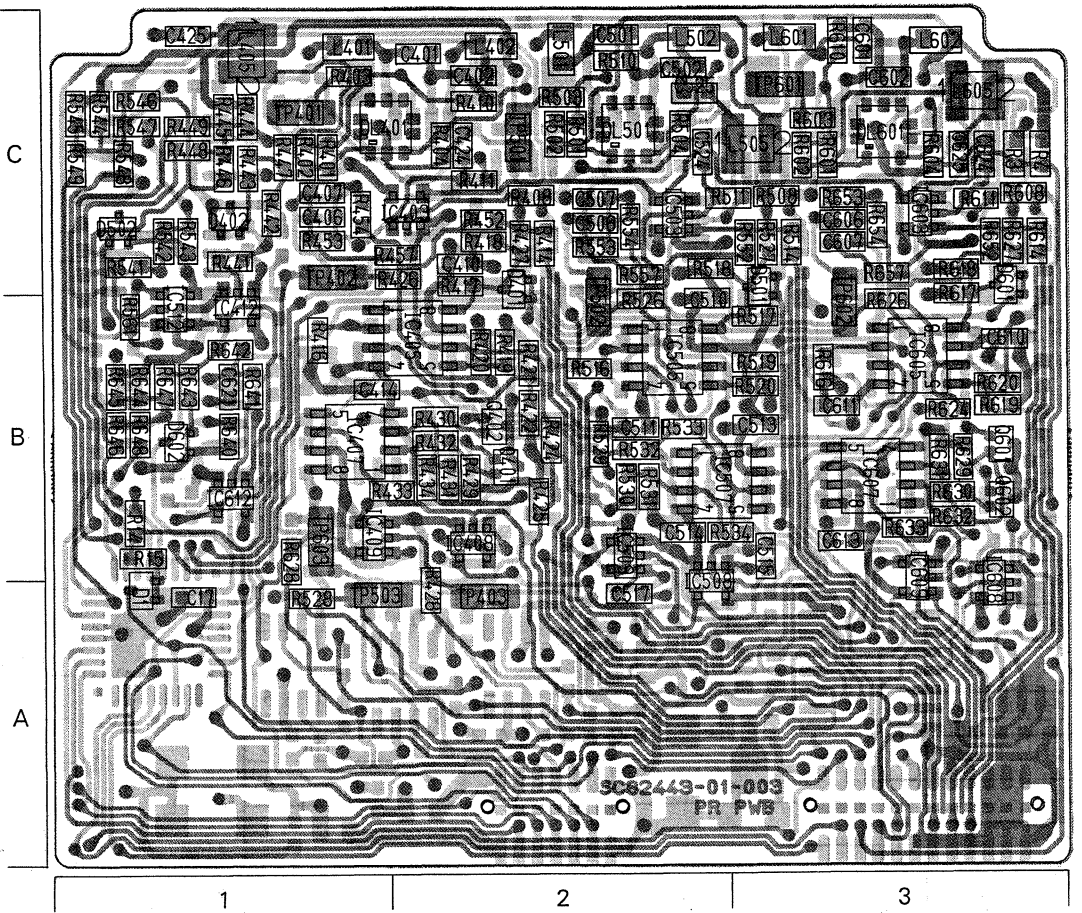


3.11 PR CIRCUIT BOARD

- Side A -

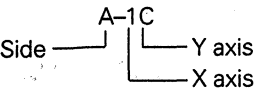


- Side B -

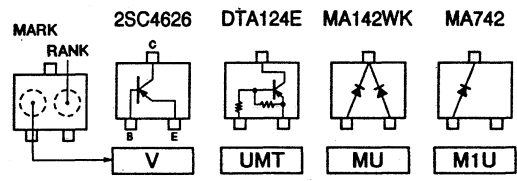


● ADDRESS TABLE OF BOARD PARTS

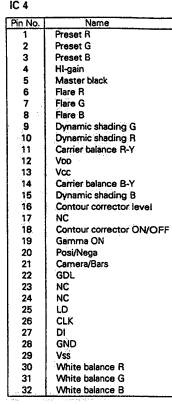
Each address may have an address error by one interval.



IC2	A-2A	IC608	B-3A	R11	A-1B	R429	B-2B	R505	A-3C	R541	B-1C	R617	B-3B	R652	B-3C	C424	B-2C	C614	A-3B	TP401	B-1C
IC3	A-3A	IC609	B-3A	R12	A-3B	R430	B-2B	R506	A-2C	R542	B-1C	R618	B-3C	R653	B-3C	C425	B-1C	C615	A-3B	TP402	B-1C
IC4	A-1A	IC610	A-3A	R13	A-3A	R431	B-2B	R507	A-3C	R543	B-1C	R619	B-3B	R654	B-3C	C426	A-2C	C616	A-3A	TP403	B-2A
IC5	A-3A	IC611	A-1A	R14	B-1B	R432	B-2B	R508	B-3C	R544	B-1C	R620	B-3B	R655	A-3C	C501	B-2C	C617	A-3A	TP501	B-2C
IC401	A-2C	IC612	B-1B	R15	B-1B	R433	B-2B	R510	B-2C	R545	B-1C	R621	A-3B	R656	B-3C	C502	B-2C	C618	A-1A	TP502	B-2B
IC402	A-1C	IC613	A-1B	R21	A-1B	R434	B-2B	R511	B-3C	R546	B-1C	R622	A-3B	R657	A-3B	C503	A-3C	C619	A-1A	TP503	B-1A
IC403	B-2C			R22	A-2A	R435	A-2A	R512	A-2B	R547	B-1C	R623	A-3B	R658	A-1B	C504	A-3C	C620	B-1B	TP601	B-3C
IC404	A-2B	Q1	A-1B	R23	A-2A	R436	A-2A	R513	A-2B	R548	B-1C	R624	B-3B	R659	A-1B	C505	A-3C	C621	A-3B	TP602	B-3B
IC405	B-2B	Q401	B-2B	R401	B-1C	R437	A-2A	R514	B-3C	R549	B-1C	R625	A-3B	R660	A-1B	C506	B-2C	C622	A-3B	TP603	B-1B
IC406	A-3A	Q402	B-2B	R402	B-1C	R438	A-1B	R515	A-2B	R550	A-1C	R626	B-3B	C1	A-1A	C507	B-2C	C623	B-3C		
IC407	B-1B	Q403	A-1C	R403	B-1C	R439	A-1B	R516	B-2B	R551	A-1C	R627	B-3C	C2	A-1A	C510	B-2B	C624	B-3C		
IC408	B-2B	Q501	A-2B	R404	B-2C	R440	A-1C	R517	B-3B	R552	B-3C	R628	B-1B	C3	A-1A	C511	B-2B	C625	B-3C		
IC409	B-1B	Q502	A-2B	R405	A-2C	R441	B-1C	R518	B-2C	R553	B-2C	R629	B-3B	C4	A-1A	C512	B-2B	C626	A-3C		
IC410	A-2B	Q503	A-2C	R406	A-1C	R442	B-1C	R519	B-3B	R554	B-2C	R630	B-3B	C5	A-3B	C513	B-3B				
IC411	A-2A	Q601	B-3B	R407	A-2C	R443	B-1C	R520	B-3B	R555	A-3B	R631	B-3B	C6	A-2B	C514	B-2B				
IC412	B-1B	Q602	B-3B	R408	B-2C	R444	B-1C	R521	A-2B	R556	A-2C	R632	B-3B	C7	A-2A	C515	B-3B				
IC413	A-1C	Q603	A-3C	R410	B-2C	R445	B-1C	R522	A-2B	R557	B-2C	R633	B-3B	C8	A-2A	C516	B-2B				
IC501	A-3C			R411	B-2C	R446	B-1C	R523	A-2B	R558	A-2B	R634	A-3B	C9	A-2A	C517	B-2A				
IC502	A-2C	D1	B-1A	R412	A-1C	R447	B-1C	R524	A-2B	R559	B-1B	R635	A-1A	C10	A-2A	C518	A-2A	L1	A-2A		
IC503	B-2C	D401	B-2C	R413	A-1C	R448	B-1C	R525	A-3B	R560	A-1B	R636	A-1A	C401	B-2C	C519	A-1A	L2	A-1A		
IC504	B-2B	D402	B-1C	R414	B-2C	R449	B-1C	R526	B-2B	R601	B-3C	R637	A-1A	C402	B-2C	C520	A-2A	L401	B-1C		
IC505	A-1B	D501	B-3C	R415	A-2B	R450	A-1C	R527	B-3C	R602	B-3C	R638	A-1B	C403	A-2C	C521	A-1C	L402	B-2C		
IC506	B-3B	D502	B-1C	R416	B-1B	R451	A-1C	R528	B-1A	R603	B-3C	R639	A-1B	C404	A-2C	C522	A-1B	L403	A-2C		
IC507	B-3B	D601	B-3C	R417	B-2C	R452	B-2C	R529	B-2B	R604	B-3C	R640	B-1B	C405	A-2C	C523	A-2B	L404	B-1C		
IC508	B-2B	D602	B-1B	R418	B-2C	R453	B-1C	R530	B-2B	R605	A-3C	R641	B-1B	C406	B-1C	C524	B-2C	L405	B-2C		
IC509	A-2B			R419	B-2B	R454	B-1C	R531	B-2B	R606	A-3C	R642	B-1B	C407	B-1C	C525	A-3C	L501	B-2C		
IC510	A-2B			R420	B-2B	R455	A-1C	R532	B-2B	R607	A-3C	R643	B-1B	C408	B-2C	C526	A-3C	L502	A-3B		
IC511	A-1A	R1	A-2A	R421	B-2B	R456	B-2C	R533	B-2B	R608	B-3C	R644	B-1B	C409	A-1B	C601	B-3C	L503	A-3B		
IC512	B-1B	R2	A-2A	R422	B-2B	R457	B-2C	R534	B-3B	R609	B-3C	R645	B-1B	C410	A-1B	C602	B-3C	L504	B-3C		
IC513	A-1C	R3	B-3C	R423	A-1B	R458	A-1B	R535	A-2A	R610	B-3C	R646	B-1B	C411	A-1B	C603	A-3C	L505	B-3C		
IC601	A-3C	R4	B-3C	R424	B-2B	R459	A-1B	R536	A-2A	R611	B-3C	R647	B-1B	C412	A-2B	C604	A-3C	L601	A-3B		
IC602	A-3C	R5	A-2A	R425	B-2B	R460	B-2C	R537	A-2A	R612	A-3B	R648	B-1B	C413	A-1B	C605	A-3C	L602	A-3B		
IC603	B-3C	R6	A-2B	R426	B-2C	R461	B-2C	R538	A-1B	R613	A-3B	R649	B-1B	C414	A-1B	C606	B-3C	L603	A-3B		
IC604	B-3C	R7	A-2B	R427	B-2C	R462	B-2C	R539	A-1B	R614	A-3B	R650	A-1B	C415	A-2B	C607	B-3C	L604	A-3B		
IC605	B-3C	R8	A-2B	R428	B-2A	R463	B-2C	R540	A-1C	R615	A-3B	R651	A-1B	C416	A-1C	C608	B-3C	L605	B-3C		
IC606	A-3B	R9	A-1B																		
IC607	B-3B	R10	A-1B																		



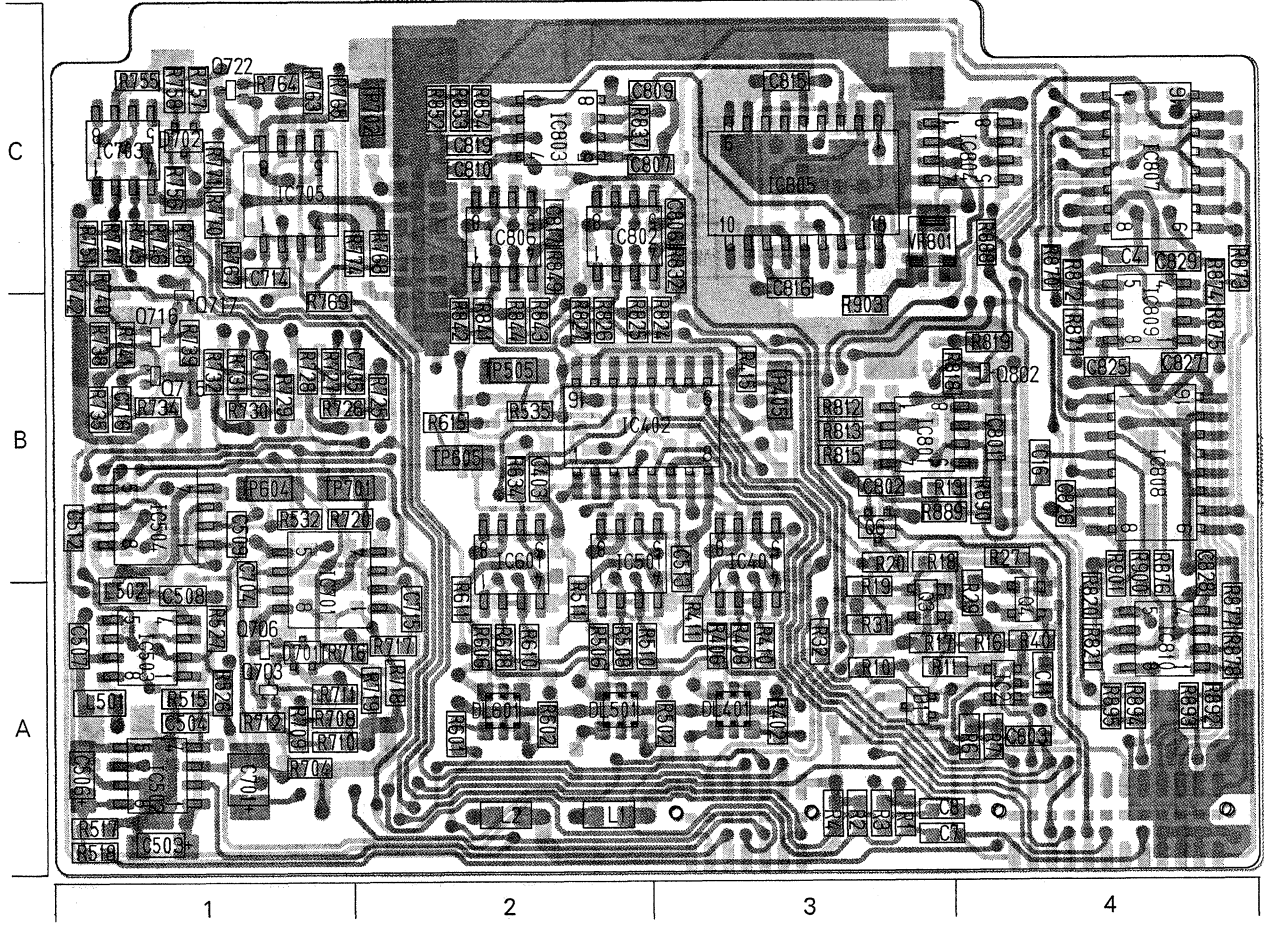
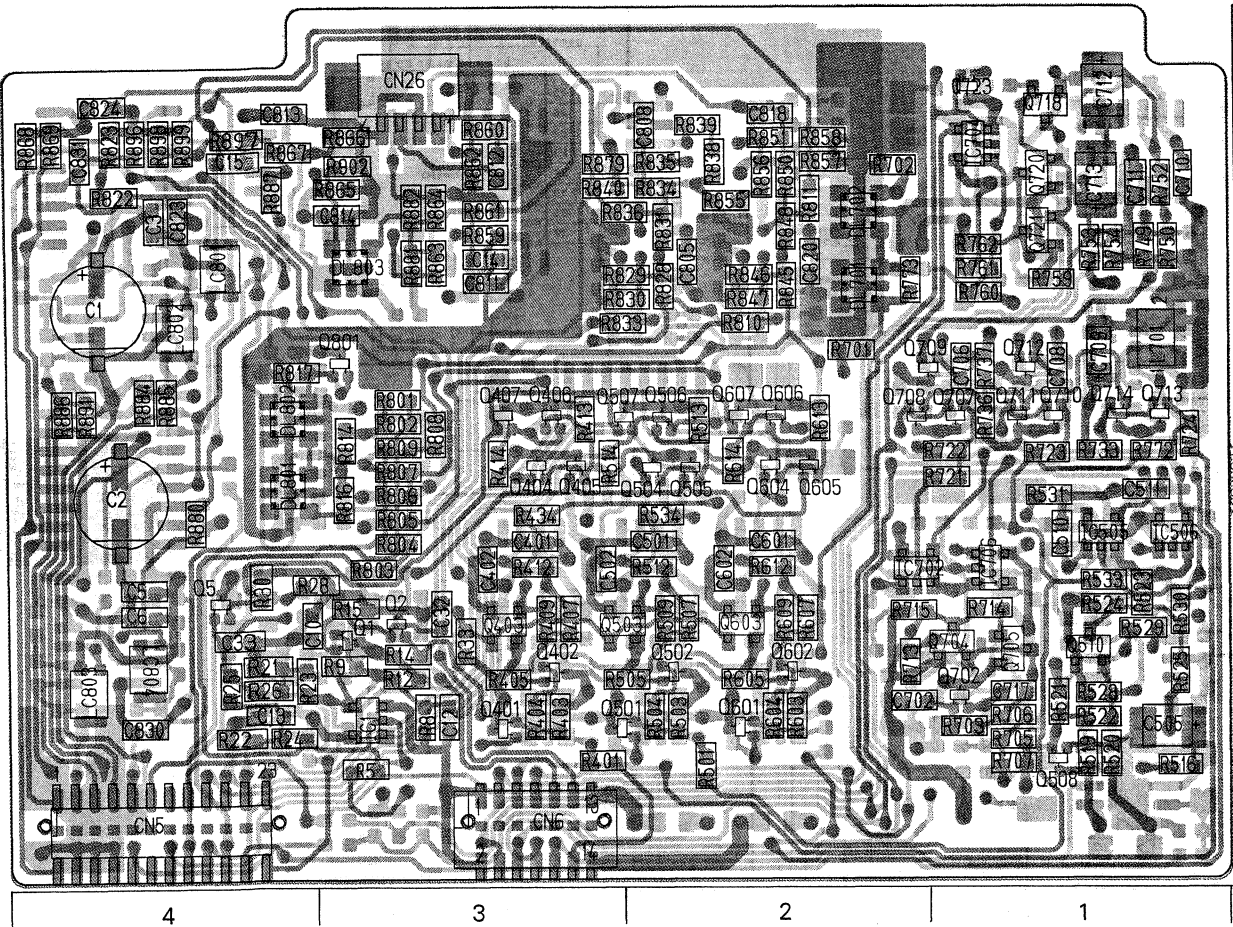
05



3.13 CE CIRCUIT BOARD

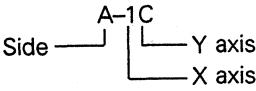
- Side A -

- Side B -



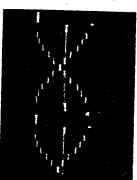
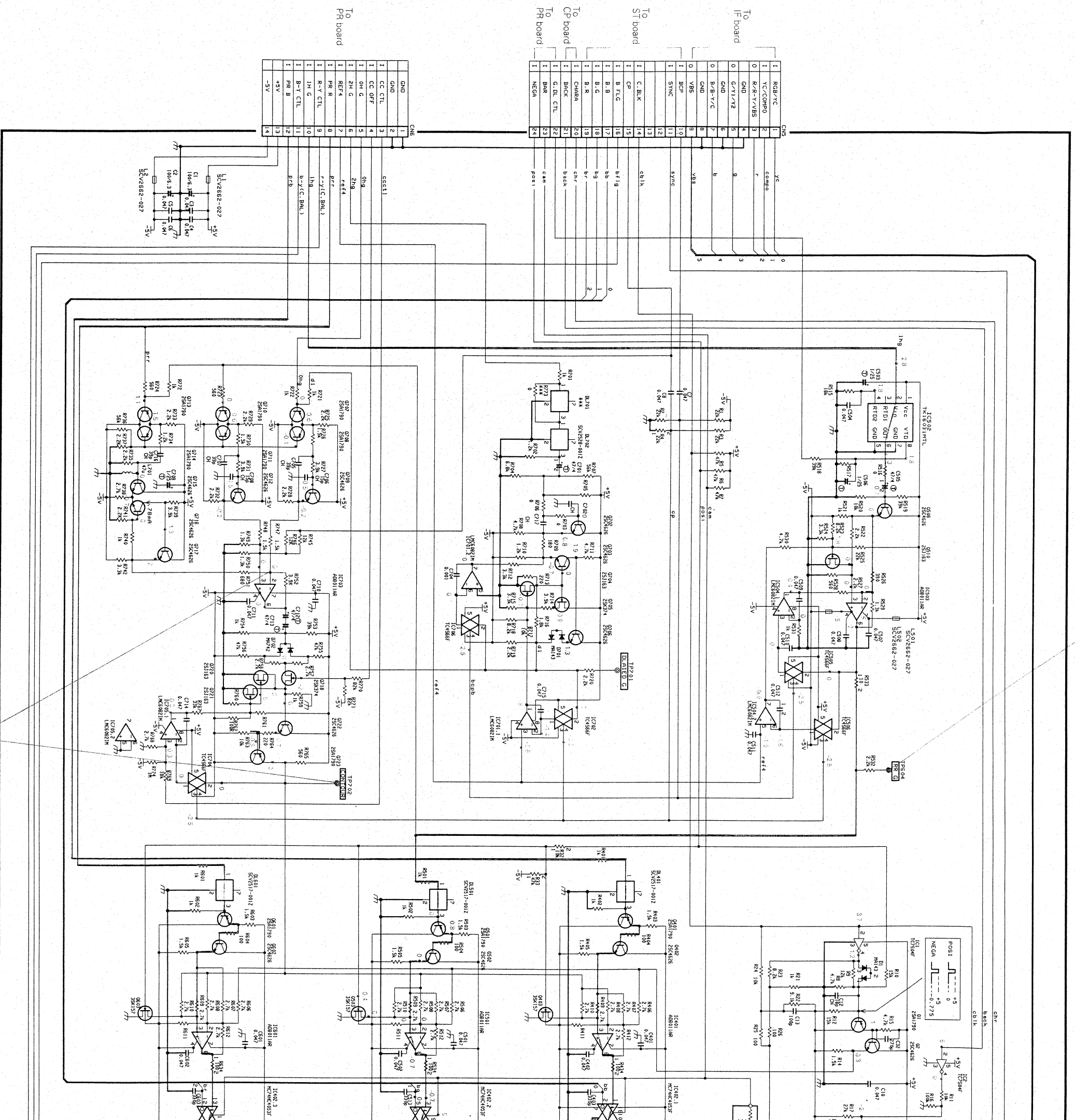
● ADDRESS TABLE OF BOARD PARTS

Each address may have an address error by one interval.

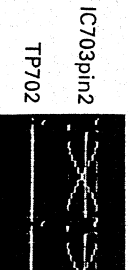


IC1	A-3A	Q402	A-3A	Q715	B-1B	R21	A-4A	R506	B-2A	R606	B-2A	R725	B-2B	R762	A-1C	R824	B-3B	R859	A-3C	R895	B-4A	C504	B-1A	C809	B-3C	DL803	A-3C
IC2	B-4A	Q403	A-3A	Q716	B-1B	R22	A-4A	R507	A-2A	R607	A-2A	R726	B-1B	R763	B-1C	R825	B-2B	R860	A-3C	R896	A-4C	C505	A-1A	C810	B-2C		
IC401	B-3B	Q404	A-3B	Q717	B-1B	R23	A-4A	R508	B-2A	R608	B-2A	R727	B-1B	R764	B-1C	R826	B-2B	R861	A-3C	R897	A-4C	C506	B-1A	C811	A-3C	TP405	B-3B
IC402	B-2B	Q405	A-3B	Q718	A-1C	R24	A-4A	R509	A-2A	R609	A-2A	R728	B-1B	R765	B-1C	R827	B-2B	R862	A-3C	R898	A-4C	C507	B-1A	C812	A-3C	TP505	B-2B
IC501	B-2B	Q406	A-3B	Q720	A-1C	R25	A-4A	R510	B-3A	R610	B-2A	R729	B-1B	R767	B-1C	R828	A-2C	R863	A-3C	R899	A-4C	C508	B-1A	C813	A-4C	TP604	B-1B
IC502	B-1A	Q407	A-3B	Q721	A-1C	R26	A-4A	R511	B-2A	R611	B-2A	R730	B-1B	R768	B-2C	R829	A-3C	R864	A-3C	R900	B-4B	C509	B-1B	C814	A-3C	TP605	B-2B
IC503	B-1A	Q501	A-3A	Q722	B-1C	R27	B-4B	R512	A-2B	R612	A-2B	R731	B-1B	R769	B-1B	R830	A-3B	R865	A-3C	R901	B-4B	C510	A-1B	C815	B-3C	TP701	B-2B
IC504	B-1B	Q502	A-2A	Q723	A-1C	R28	A-4B	R513	A-2B	R613	A-2B	R732	A-1B	R770	B-1C	R831	A-2C	R866	A-4C	R902	B-4B	C511	A-1B	C816	B-3B	TP702	B-2C
IC505	A-1B	Q503	A-3A	Q801	A-3B	R29	B-4A	R514	A-3B	R614	A-2B	R733	A-1B	R771	B-1C	R832	B-3C	R867	A-4C	R903	B-3B	C512	B-1B	C817	B-2C		
IC506	A-1B	Q504	A-2B	Q802	B-4B	R30	A-4A	R515	B-1A	R615	B-2B	R734	B-1B	R772	A-1B	R833	A-3B	R868	A-4C			C513	B-3B	C818	A-2C	LC801	A-4C
IC601	B-2B	Q505	A-2B			R31	B-3A	R516	A-1A	R616	A-2B	R735	B-1B	R773	A-2C	R834	A-2C	R869	A-4C			C601	A-2B	C819	B-2C	LC802	A-4B
IC701	B-1A	Q506	A-2B	D1	B-3A	R32	B-3A	R517	B-1A	R617	A-2B	R736	A-1B	R774	B-2C	R835	A-2C	R870	B-4C	VR801	B-3C	C602	A-2B	C820	A-2C	LC803	A-4A
IC702	A-2B	Q507	A-3B	D701	B-1A	R33	A-3A	R518	B-1A	R618	A-2C	R737	A-1B	R801	A-3B	R836	A-3C	R871	B-4B	C1	A-4B	C603	B-4A	C821	A-4C	LC804	A-4A
IC703	B-1C	Q508	A-1A	D702	B-1C	R40	B-4A	R519	A-1A	R619	A-1A	R703	A-1A	R802	A-3B	R837	B-3C	R872	B-4B	C2	A-4B	C701	B-1A	C822	A-4C		
IC704	A-1C	Q510	A-1A			R401	A-3A	R520	A-1A	R620	A-1A	R704	B-1A	R803	A-3B	R838	A-2C	R873	B-4C	C3	A-4C	C702	A-2A	C823	A-4C	CN5	A-4A
IC705	B-1C	Q601	A-2A	R1	B-3A	R402	B-3A	R521	A-1A	R621	A-1A	R705	A-1A	R804	A-3B	R839	A-2C	R874	B-4B	C4	A-4C	C704	B-1A	C824	A-4C	CN6	A-3A
IC706	A-1B	Q602	A-2A	R2	B-3A	R403	A-3A	R522	A-1A	R622	A-1A	R706	A-1A	R805	A-3B	R840	A-3C	R875	B-4B	C5	A-4A	C705	B-2B	C825	B-4B	CN26	A-3C
IC801	B-3B	Q603	A-2A	R3	B-3A	R404	A-3A	R523	A-1A	R623	A-1A	R707	A-1A	R806	A-3B	R841	B-2B	R876	B-4B	C6	A-4A	C706	A-1B	C826	B-4B		
IC802	B-2C	Q604	A-2B	R4	B-3A	R405	A-3A	R524	A-1A	R624	A-1A	R708	B-1A	R807	A-3B	R842	B-2B	R877	B-4A	C7	B-3A	C707	B-1B	C827	B-4C		
IC803	B-2C	Q605	A-2B	R5	A-3A	R406	B-3A	R525	A-1A	R625	A-1A	R709	B-1A	R808	A-3B	R843	B-2B	R878	B-4A	C8	B-3A	C708	A-1B	C828	B-4B		
IC804	B-4C	Q606	A-2B	R6	B-4A	R407	B-4A	R526	B-1A	R626	B-1A	R710	B-1A	R809	A-3B	R844	B-2B	R879	A-3C	C10	A-4A	C709	A-1B	C829	B-4C		
IC805	B-3C	Q607	A-2B	R7	B-4A	R408	B-3A	R527	B-1A	R627	B-1A	R711	B-1A	R810	A-2B	R845	A-2C	R880	A-4B	C11	B-4A	C710	A-1C				
IC806	B-2C	Q702	A-1A	R8	A-3A	R409	A-3A	R528	A-1A	R628	B-1A	R712	B-1A	R811	A-2C	R846	A-2C	R881	A-3C	C12	A-3A	C711	A-1C	L1	B-2A		
IC807	B-4C	Q703	B-1A	R9	A-3A	R410	B-3A	R529	A-1A	R629	A-1A	R713	A-2A	R812	B-3B	R847	A-2B	R882	A-3C	C13	A-4A	C712	A-1C	L2	B-2A		
IC808	B-4B	Q704	A-1A	R10	A-3A	R411	B-3A	R530	A-1B	R630	A-1A	R714	A-1A	R813	B-3B	R848	A-2C	R884	A-4B	C14	A-4C	C713	A-1C	L501	B-1A		
IC809	B-4B	Q705	A-1A	R11	B-3A	R412	A-3B	R531	A-1B	R631	A-1B	R715	A-2A	R814	A-3B	R849	B-2C	R885	A-4B	C15	A-3C	C714	B-1C	L502	B-1A		
IC810	B-4A	Q706	B-1A	R12	B-3A	R413	A-3B	R532	A-1B	R632	B-1B	R716	A-1A	R815	B-3B	R850	A-2C	R886	A-4B	C16	B-4A	C715	B-2A	L701	A-1B		
		Q707	A-1B	R13	B-3B	R414	A-3B	R533	A-1B	R633	A-1B	R717	B-2A	R816	A-3B	R851	A-2C	R887	A-4C	C32	A-3B	C716	B-1B				
		Q708	A-2B	R14	B-3A	R415	B-3B	R534	A-2B	R634	B-2B	R718	B-2A	R817	A-4B	R852	B-2C	R888	B-4C	C33	A-4A	C717	A-1A	DL401	B-3A		
Q1	A-3A	Q709	A-2B	R15	A-3A	R416	A-3B	R535	B-2B	R635	B-2B	R719	B-2A	R818	B-4B	R853	B-2C	R889	B-3B	C401	A-3B	C801	B-4B	DL501	B-2A		
Q2	A-3A	Q710	A-1B	R16	B-4A	R501	A-2A	R601	B-2A	R602	B-2A	R720	B-2B	R819	B-4B	R854	B-2C	R890	B-4B	C402	A-3B	C802	B-3B	DL601	B-2A		
Q3	B-3A	Q711	A-1B	R17	B-3A	R502	B-3A	R602	B-2A	R721	A-1B	R758	B-1C	R820	B-4A	R855	A-2C	R891	A-4B	C403	B-2B	C805	A-2C	DL701	A-2C		
Q4	B-4A	Q712	A-1B	R18	B-3B	R503	A-2A	R603	A-2A	R722	A-1B	R759	A-1C	R821	B-4A	R856	A-2C	R892	B-4A	C501	A-2B	C806	B-3C	DL702	A-2C		
Q5	A-4A	Q713	A-1B	R19	B-3A	R504	A-2A	R604	A-2A	R723	A-1B	R760	A-1B	R822	A-4C	R857	A-2C	R893	B-4A	C502	A-3B	C807	B-3C	DL801	A-4B		
Q6	B-3B	Q714	A-1B	R20	B-3B	R505	A-3A	R605	A-2A	R724	A-1B	R761	A-1C	R823	A-4C	R858	A-2C	R894	B-4A	C503	B-1A	C808	A-2C	DL802	A-4B		
Q401	A-3A																										

3.14 CE BOARD SCHEMATIC DIAGRAM [6]

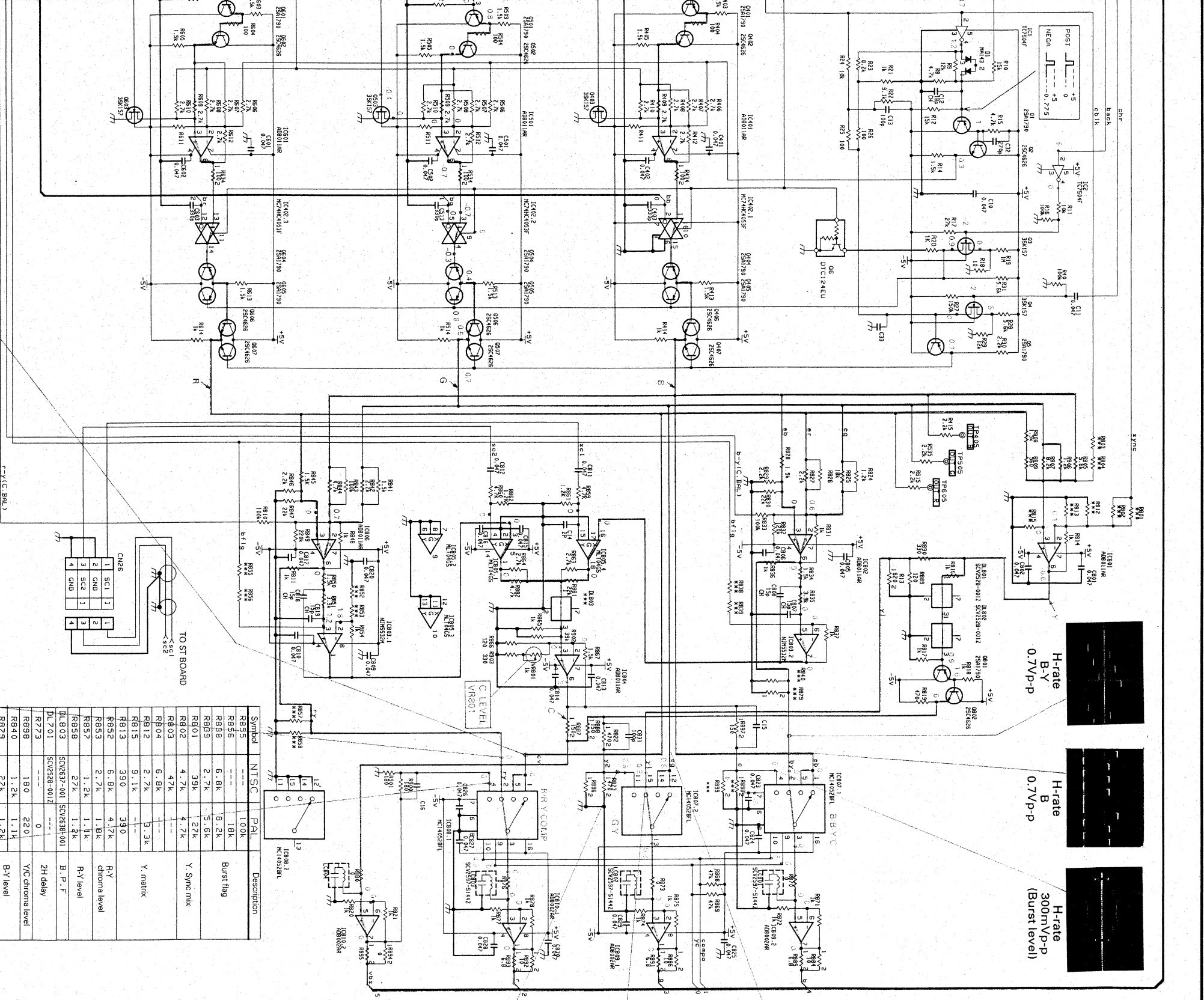


H-rate
2.0V/p-p



H-rate

H-rate
R
0.7V



Symbol	NTSC	PAL	Description
R855	---	100k	Burst flag
R856	---	18k	
R858	6.8k	8.2k	
R859	2.7k	5.6k	
R801	39k	27k	Y Sync mix
R802	4.7k	4.7k	
R803	47k	---	
R804	6.8k	---	
R812	2.7k	3.3k	Y matrix
R815	9.1k	---	
R813	390	390	
R852	6.8k	4.7k	R-Y
R853	2.7k	1.8k	chroma level
R857	2.7k	1.1k	R-Y level
R858	2.7k	1.4k	
DL803	SCV2328-001	SCV2328-001	B. P. F.
DL701	SCV2328-001Z	---	2H delay
R773	---	0	
R858	180	220	V/C chroma level
R840	1.2k	1.1k	
R879	2.7k	1.2k	B-Y level
R899	3.3k	1.5k	V/C chroma level

H-rate
R
0.7Vp-p

H-rate
R-Y
0.7Vp-p

H-rate
1.0Vp-p

H-rate
1.0Vp-p

H-rate
1.0Vp-p

H-rate
G
0.7Vp-p

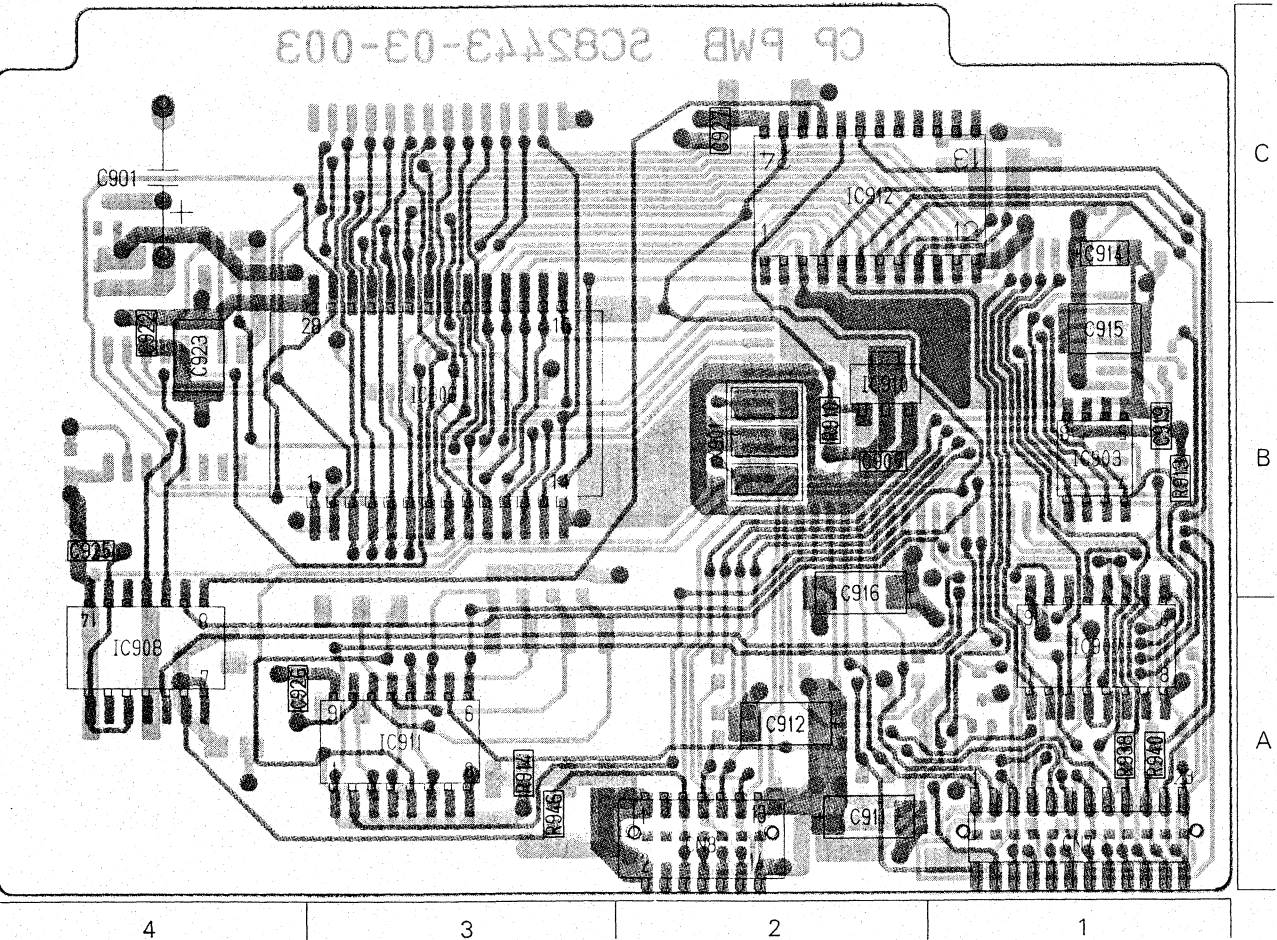
H-rate
B-Y
0.7Vp-p

H-rate
B
0.7Vp-p

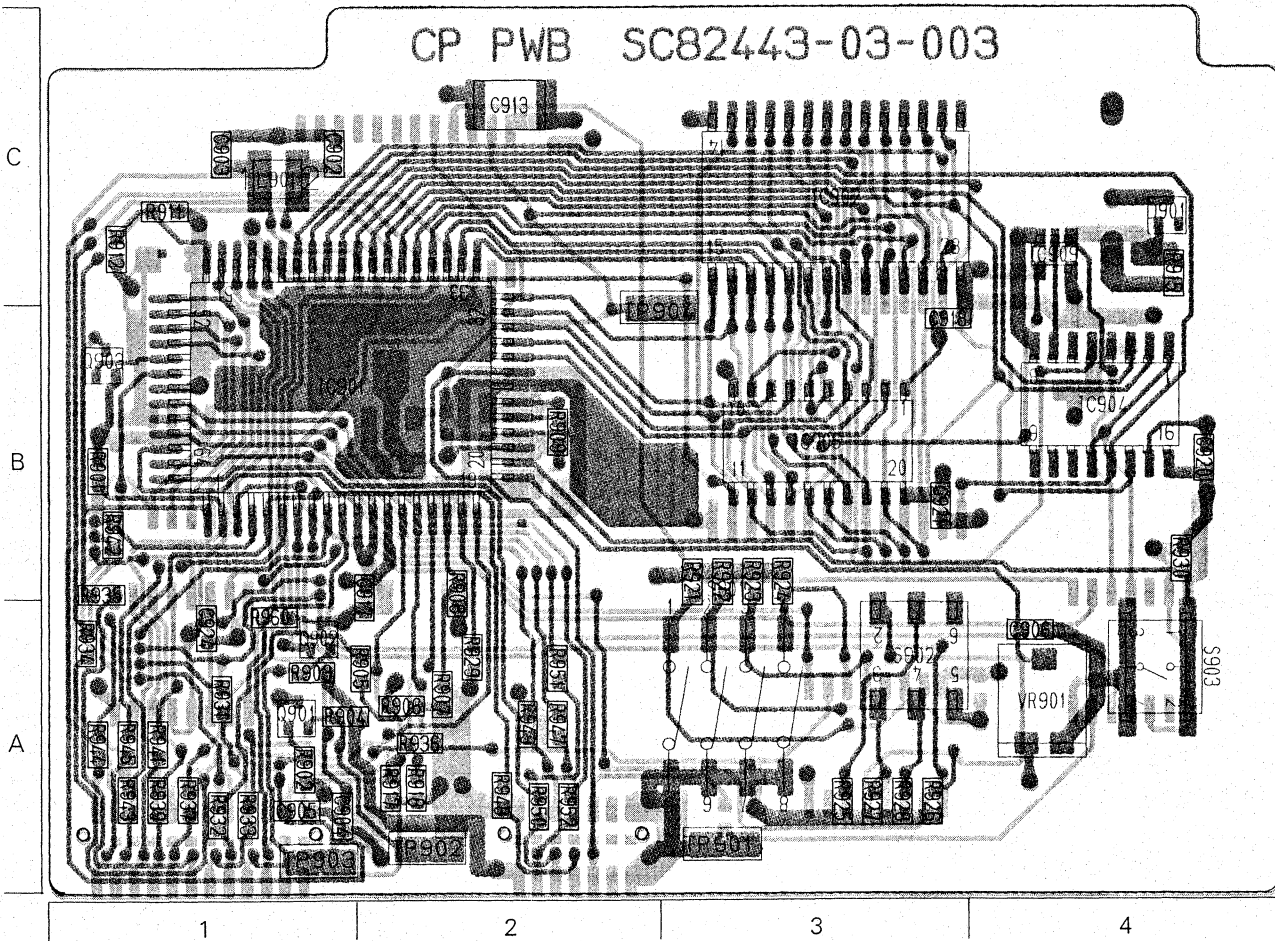
H-rate
300mVp-p
(Burst level)

3.15 CP CIRCUIT BOARD

- Side A -



- Side B -

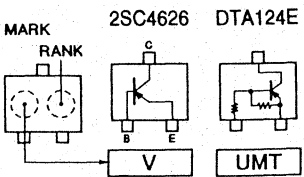


● ADDRESS TABLE OF BOARD PARTS

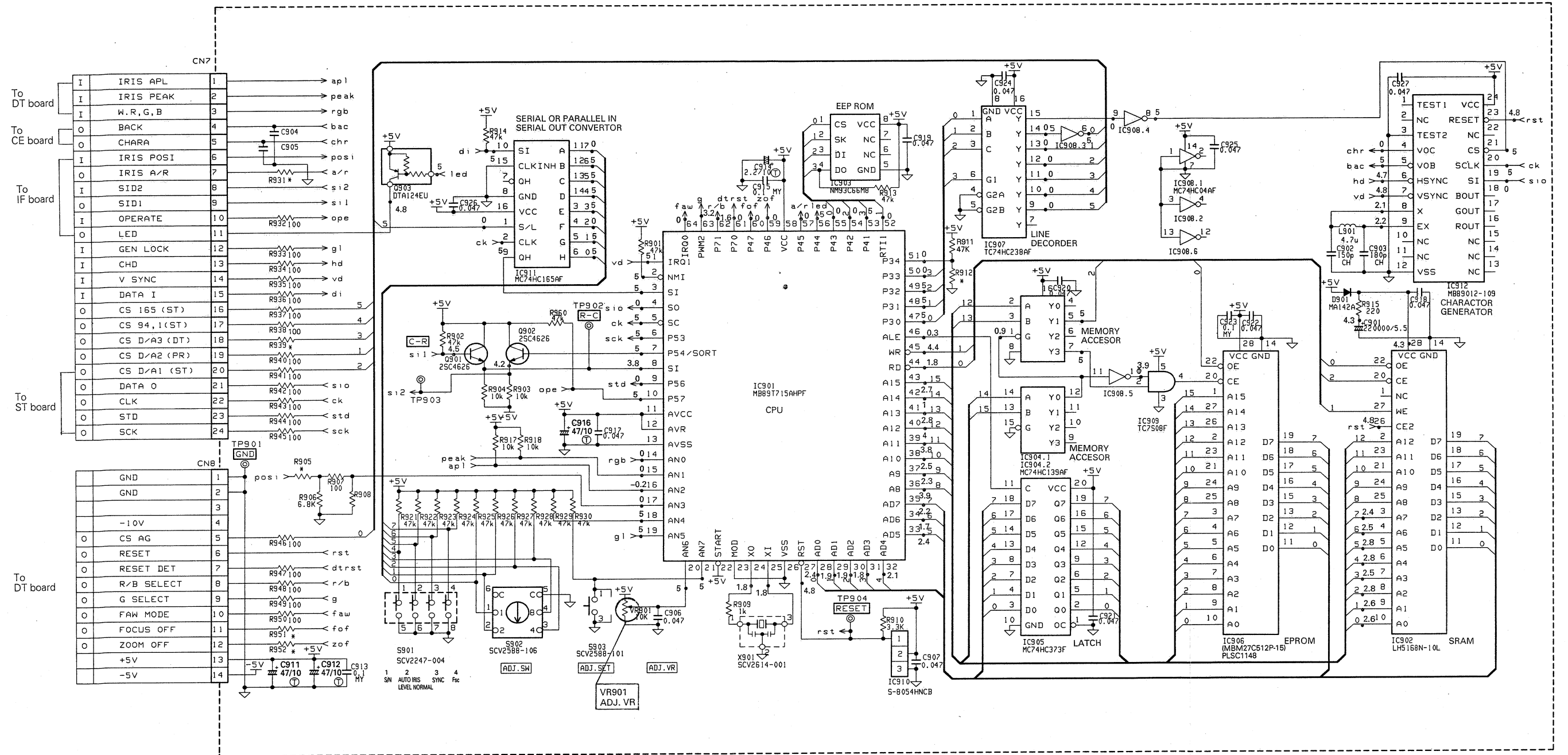
Each address may have an address error by one interval.

Side — A-1C
Y axis
X axis

IC901	B-1B	R918	B-2A	VR901	B-4A	S902	B-3A
IC902	B-3C	R921	B-3B	C901	A-4C	S903	B-4A
IC903	A-1B	R922	B-3B	C902	B-1C	CN7	A-1A
IC904	B-4B	R923	B-3B	C903	B-1C	CN8	A-2A
IC905	B-3B	R924	B-3B	C904	B-1A	X901	A-2B
IC906	A-3B	R925	B-3A	C905	B-1A		
IC907	A-1A	R926	B-3A	C906	B-4A		
IC908	A-4A	R927	B-3A	C907	A-2B		
IC909	B-4C	R928	B-3A	C908	A-2A		
IC910	A-2B	R929	B-2A	C909	A-2A		
IC911	A-3A	R930	B-4B	C910	A-2A		
IC912	A-2C	R931	B-1A	C911	B-2C		
		R932	B-1A	C912	A-1C		
Q901	B-1A	R933	B-1A	C913	A-1B		
Q902	B-1A	R934	B-1A	C914	A-2B		
Q903	B-1B	R935	B-1B	C915	B-2A		
		R936	B-2A	C916	B-3B		
D901	B-4C	R937	B-1A	C917	A-1B		
		R938	A-1A	C918	B-4B		
R901	B-1B	R939	B-1A	C919	B-3B		
R902	B-1A	R940	A-1A	C920	A-4B		
R903	B-1A	R941	B-1A	C921	A-4B		
R904	B-1A	R942	B-1B	C922	B-1A		
R905	B-2A	R943	B-1A	C923	A-4B		
R906	B-2A	R944	B-1A	C924	A-4A		
R907	B-2A	R945	B-1A	C925	A-2C		
R908	B-2B	R946	A-3A	C926			
R909	B-2B	R947	B-2A	C927			
R910	A-2B	R948	B-2A	L901	B-1C		
R911	B-1C	R949	B-2A	TP901	B-3A		
R912	B-1C	R950	B-2A	TP902	B-2A		
R913	A-1B	R951	B-2A	TP903	B-1A		
R914	A-3A	R952	B-2A	TP904	B-3B		
R915	B-4C	R960	B-1A	S901	B-3A		
R917	B-2A						

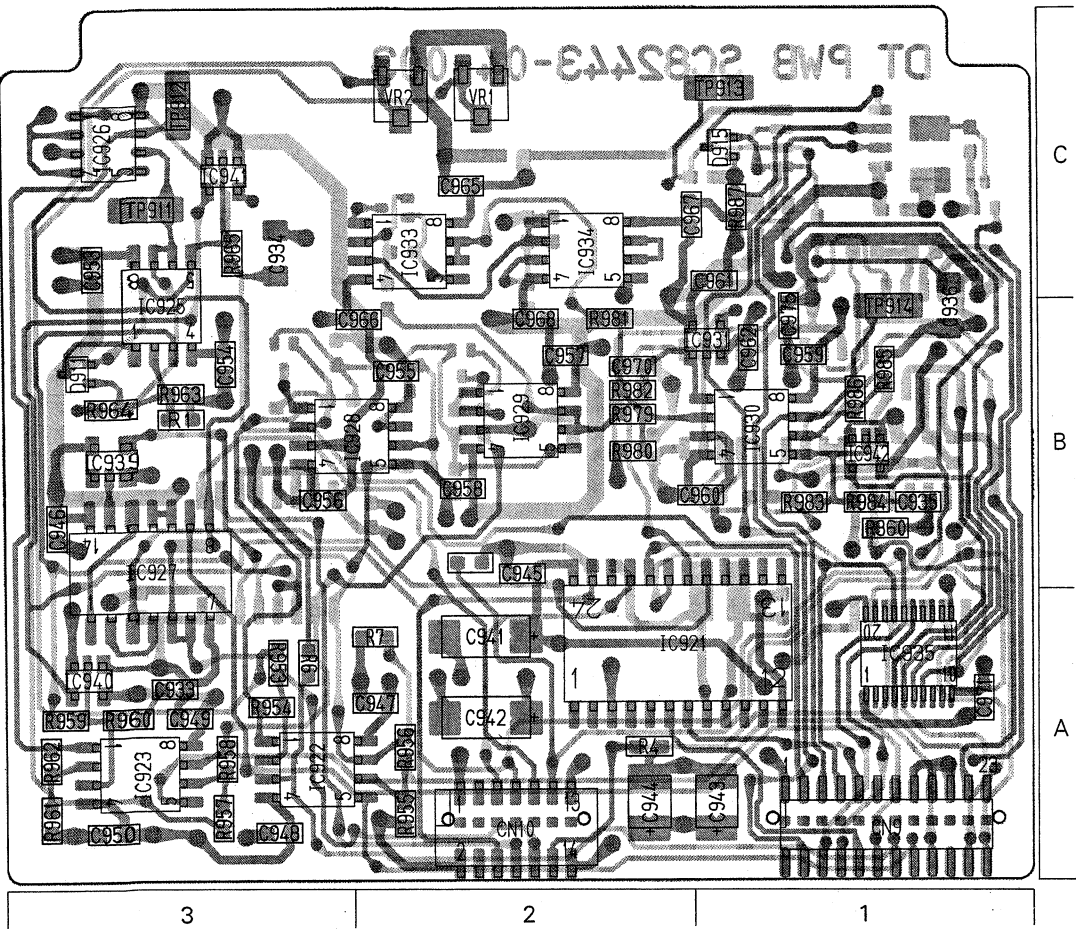


3.16 CP BOARD SCHEMATIC DIAGRAM 07

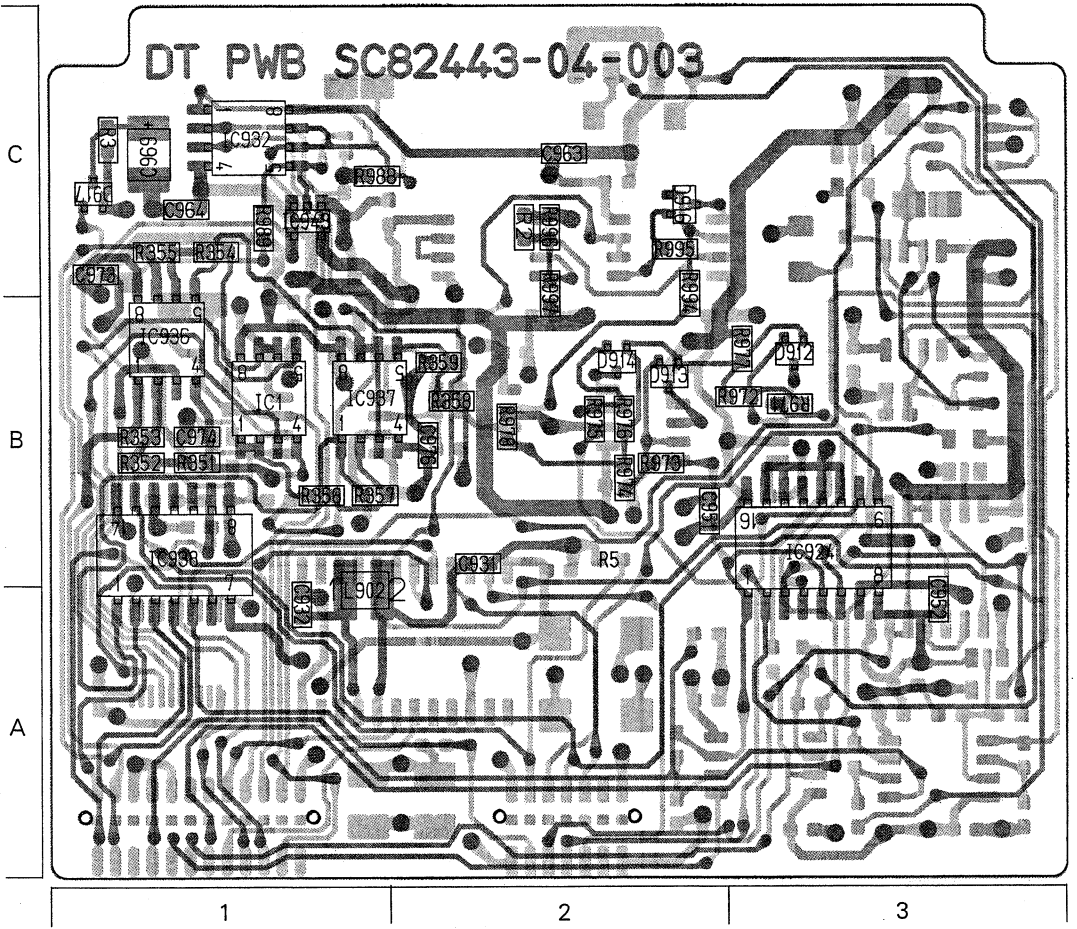


3.17 DT CIRCUIT BOARD

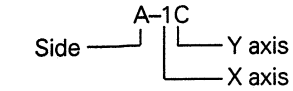
- Side A -



- Side B -



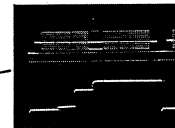
● ADDRESS TABLE OF BOARD PARTS
Each address may have an address error by one interval.



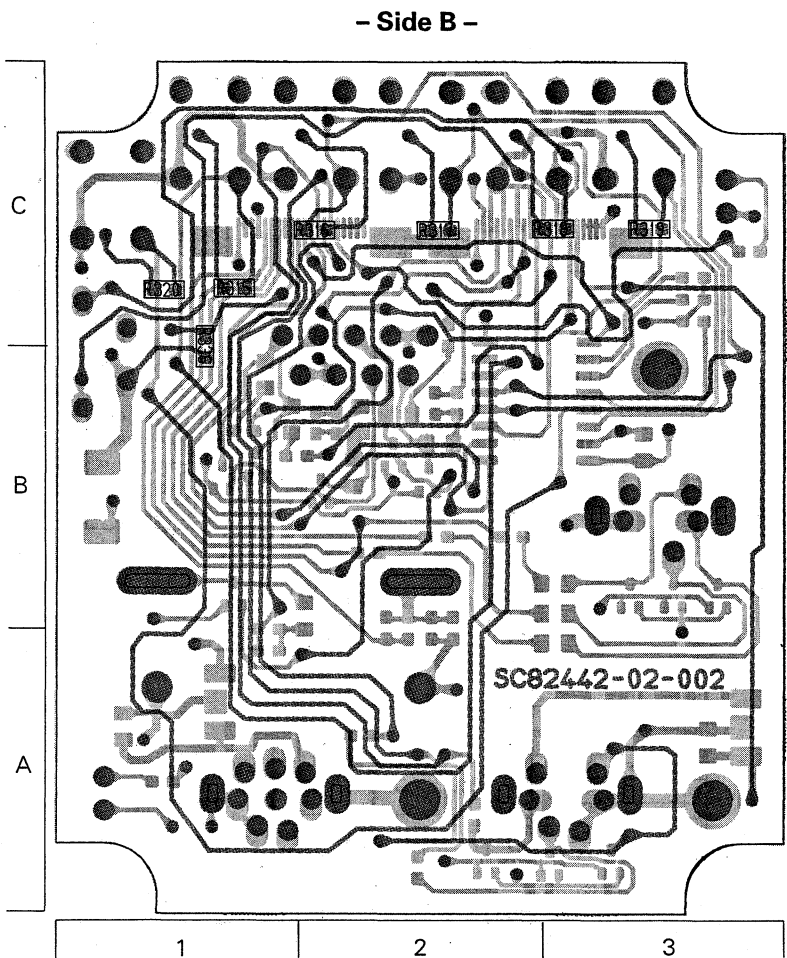
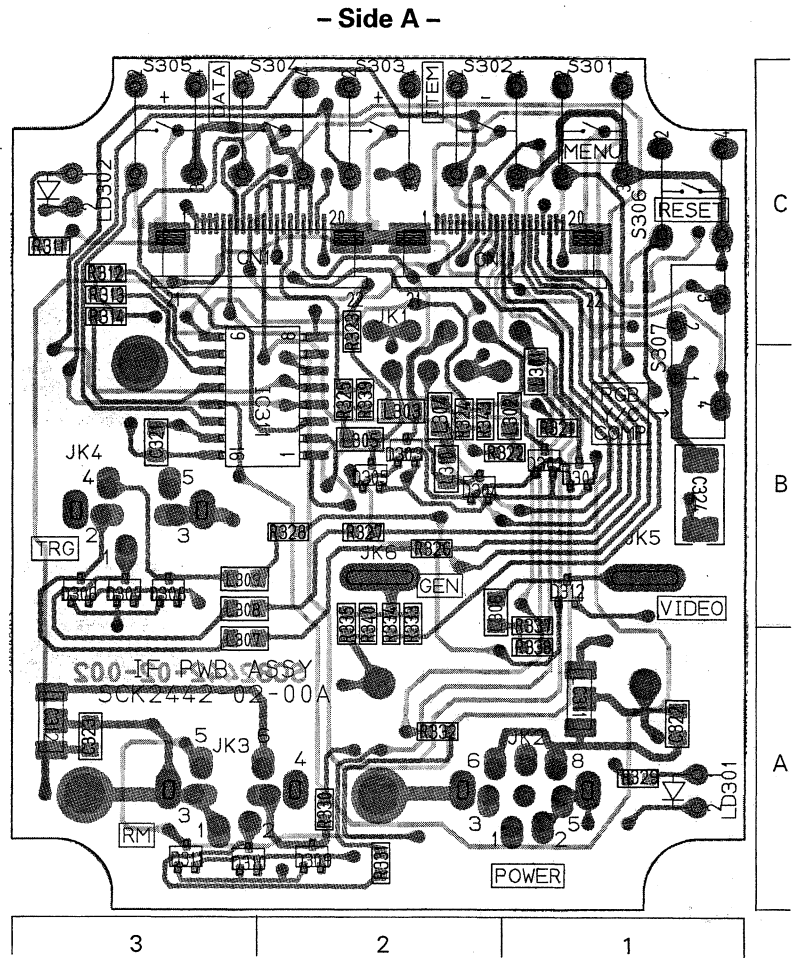
IC1	B-1B	R3	B-1C	R978	B-2B	C950	A-3A	CN10	A-2A
IC921	A-2A	R4	A-2A	R979	A-2B	C951	B-2B		
IC922	A-3A	R5	A-2B	R980	A-2B	C952	B-3A		
IC923	A-3A	R6	A-3A	R981	A-2B	C953	A-3C		
IC924	B-3B	R7	A-2A	R982	A-2B	C954	A-3B		
IC925	A-3B	R351	B-1B	R983	A-1B	C955	A-2B		
IC926	A-3C	R352	B-1B	R984	A-1B	C956	A-3B		
IC927	A-3B	R353	B-1B	R985	A-1B	C957	A-2B		
IC928	A-3B	R354	B-1C	R986	A-1B	C958	A-2B		
IC929	A-2B	R355	B-1C	R987	A-1C	C959	A-1B		
IC930	A-1B	R356	B-1B	R988	B-2C	C960	A-2B		
IC931	A-1B	R357	B-1B	R989	B-1C	C961	A-1C		
IC932	B-1C	R358	B-2B	R994	B-2B	C962	A-1B		
IC933	A-2C	R359	B-2B	R995	B-2C	C963	B-2C		
IC934	A-2C	R360	A-1B	R996	B-2C	C964	B-1C		
IC935	A-1A	R953	A-3A	R997	B-2B	C965	A-2C		
IC936	B-1B	R954	A-3A			C966	A-3B		
IC937	B-1B	R955	A-2A	VR1	A-2C	C967	A-2C		
IC938	B-1B	R956	A-2A	VR2	A-2C	C968	A-2B		
IC939	A-3B	R957	A-3A			C969	B-1C		
IC940	A-3A	R958	A-3A	C931	B-2B	C970	A-2B		
IC941	A-3C	R959	A-3A	C932	B-1A	C971	A-1A		
IC942	A-1B	R960	A-3A	C933	A-3A	C973	B-1C		
IC943	B-1C	R961	A-3A	C934	A-3C	C974	B-1B		
		R962	A-3A	C935	A-1B	C975	A-1B		
		R963	A-3B	C936	A-1B	C976	B-2B		
D911	A-3B	R964	A-3B	C941	A-2A				
D912	B-3B	R965	A-3C	C942	A-2A	L902	B-1A		
D913	B-2B	R971	B-3B	C943	A-1A				
D914	B-2B	R972	B-3B	C944	A-2A	TP911	A-3C		
D915	A-1C	R973	B-2B	C945	A-2B	TP912	A-3C		
D916	B-2C	R974	B-2B	C946	A-3B	TP913	A-1C		
D917	B-1C	R975	B-2B	C947	A-2A	TP914	A-1B		
		R976	B-2B	C948	A-3A				
R1	A-3B	R977	B-3B	C949	A-3A	CN9	A-1A		
R2	B-2C								

08

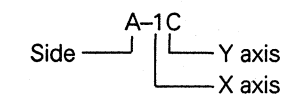
— — — — —



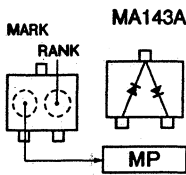
3.19 IF CIRCUIT BOARD



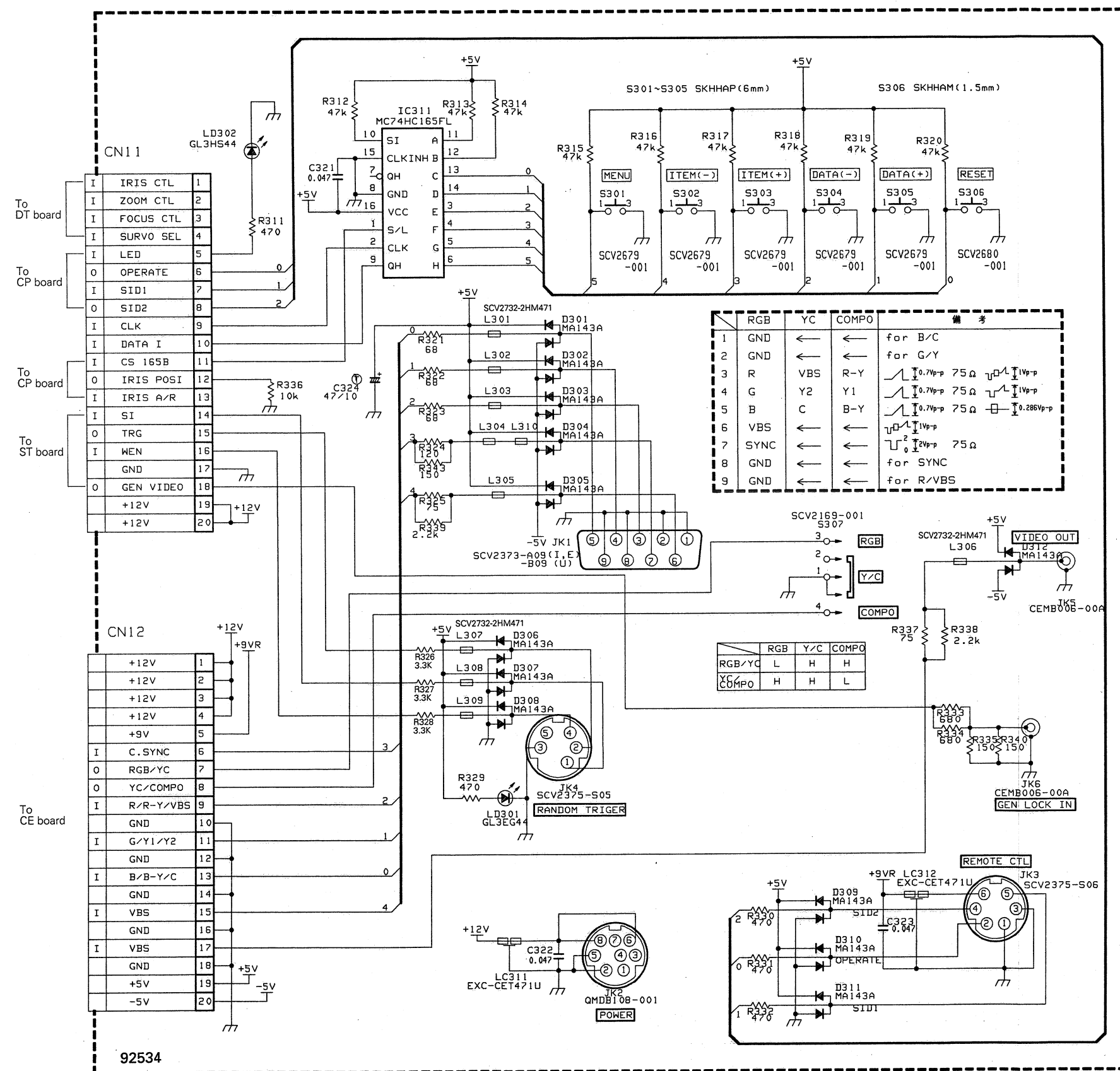
● ADDRESS TABLE OF BOARD PARTS
Each address may have an address error by one interval.



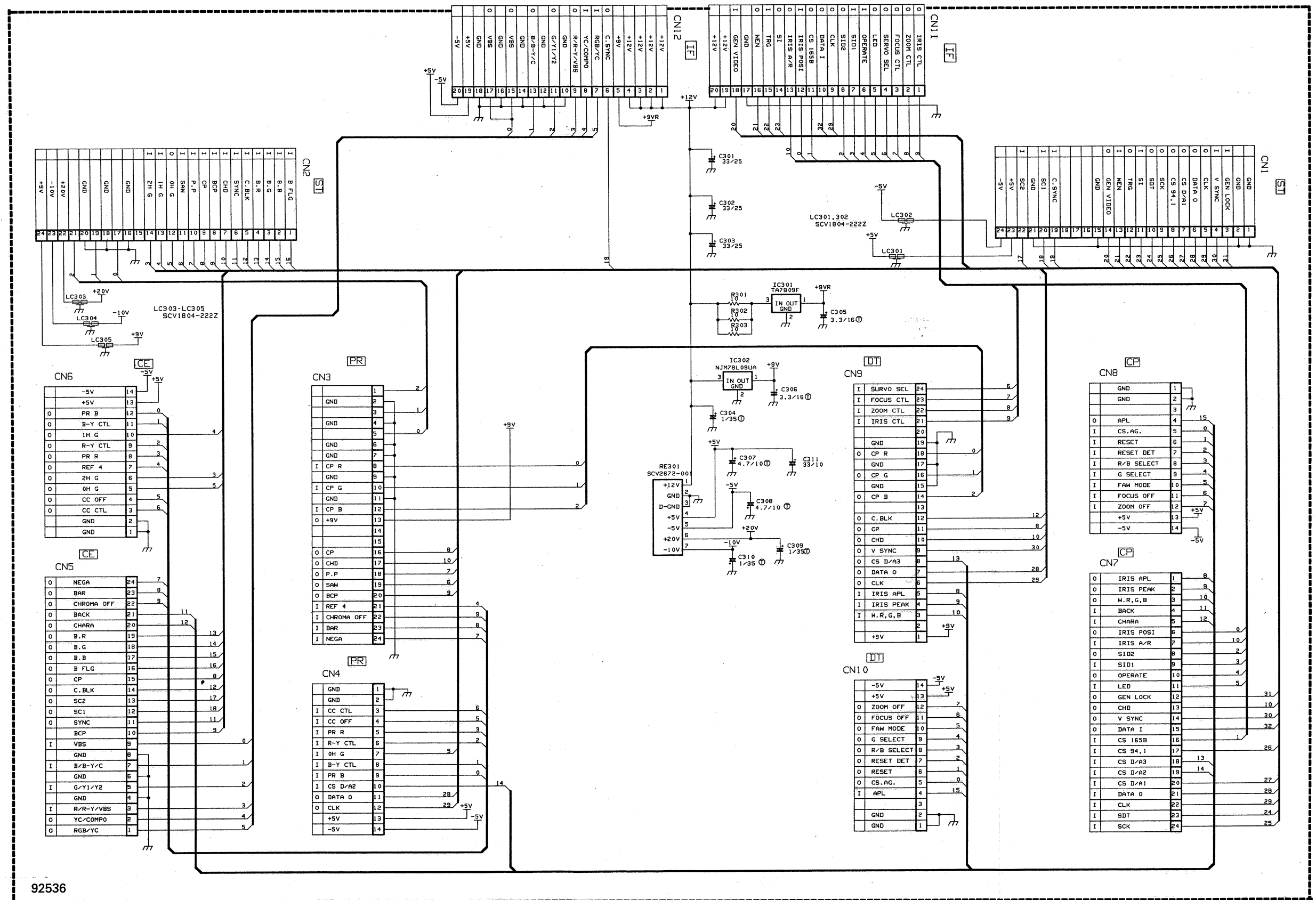
IC311	A-3B	R331	A-2A	JK5	A-1B
D301	A-1B	R332	A-2A	JK6	A-2B
D302	A-1B	R333	A-2B	LC311	A-1A
D303	A-2B	R334	A-2B	LC312	A-3A
D304	A-2B	R335	A-2B	LD301	A-1A
D305	A-2B	R336	B-1C	LD302	A-3C
D306	A-2B	R337	A-1B	S301	A-1C
D307	A-3B	R338	A-1A	S302	A-2C
D308	A-3B	R339	A-2B	S303	A-2C
D309	A-2A	R340	A-2B	S304	A-2C
D310	A-3A	R343	A-2B	S305	A-3C
D311	A-3A	C321	A-3B	S306	A-1C
D312	A-1B	C322	A-1A	S307	A-1C
		C323	A-3A		
		C324	A-1B		
R311	A-3C	L301	A-1B		
R312	A-3C	L302	A-1B		
R313	A-3C	L303	A-2B		
R314	A-3C	L304	A-2B		
R315	B-1C	L305	A-2B		
R316	B-2C	L306	A-2B		
R317	B-2C	L307	A-3A		
R318	B-3C	L308	A-3B		
R319	B-3C	L309	A-3B		
R320	B-1C	L310	A-2B		
R321	A-1B	CN11	A-2C		
R322	A-2B	CN12	A-3C		
R323	A-2C				
R324	A-2B				
R325	A-2B				
R326	A-2B				
R327	A-2B	JK1	A-2C		
R328	A-2B	JK2	A-1A		
R329	A-1A	JK3	A-3A		
R330	A-2A	JK4	A-3B		



3.20 IF BORAD SCHEMATIC DIAGRAM 09



3.22 MT BOARD SCHEMATIC DIAGRAM 1 0



■ AD603AR [ANALOG DEVICES]
(Variable Gain CTL Amplifire)



Pin No.	Pin Name
1	GPOS Gain CTL Input " HI "
2	GNEG Gain CTL Input " LOW "
3	VINP Amp. Input
4	COMM GND
5	FDBK Feedback
6	VNEG V _{ss}
7	VOUT Output
8	VPOS V _∞

Pin diagram of the AD8002 dual op-amp. The chip has 8 pins. Pin 1 is OUT1, Pin 2 is -IN1, Pin 3 is +IN1, Pin 4 is V-, Pin 5 is +IN2, Pin 6 is -IN2, Pin 7 is OUT2, and Pin 8 is V+.

Pinout diagram for the AD8011 op-amp:

- Pin 1: NC
- Pin 2: -IN
- Pin 3: +IN
- Pin 4: V-
- Pin 5: NC
- Pin 6: OUT
- Pin 7: V+
- Pin 8: NC

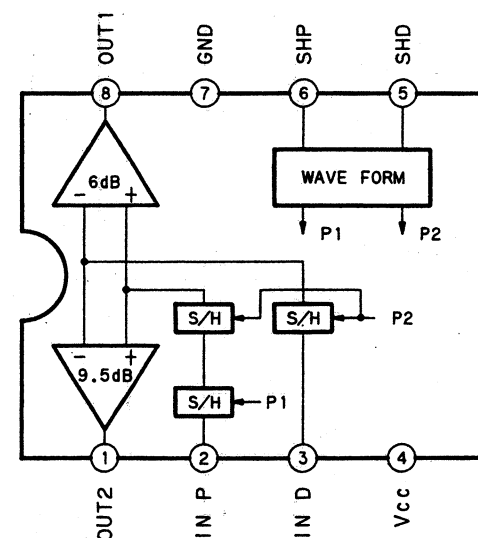
Pin diagram of the AD830 integrated circuit. The chip is shown with pins 1 through 8. Pin 1 is X1, Pin 2 is X2, Pin 3 is Y1, Pin 4 is Y2, Pin 5 is V_N , Pin 6 is NC, Pin 7 is OUT, and Pin 8 is V_P . The internal circuit shows two input comparators ($V=1$) and a differential amplifier ($A=1$) with a feedback capacitor.

The diagram shows the top view of a 741 op-amp package. The package is rectangular with a semi-circular notch at the top center. A black dot is located in the upper left corner. The pins are numbered 1 through 8 around the perimeter. The internal circuitry shows an operational amplifier with a non-inverting input (+) connected to pin 3, an inverting input (-) connected to pin 2, and the output connected to pin 6. The output is also connected to pin 5, which is labeled NC (No Connection). The power supply pins are pin 4 (-V_S) and pin 7 (+V_S). Pins 1 and 8 are labeled NULL.

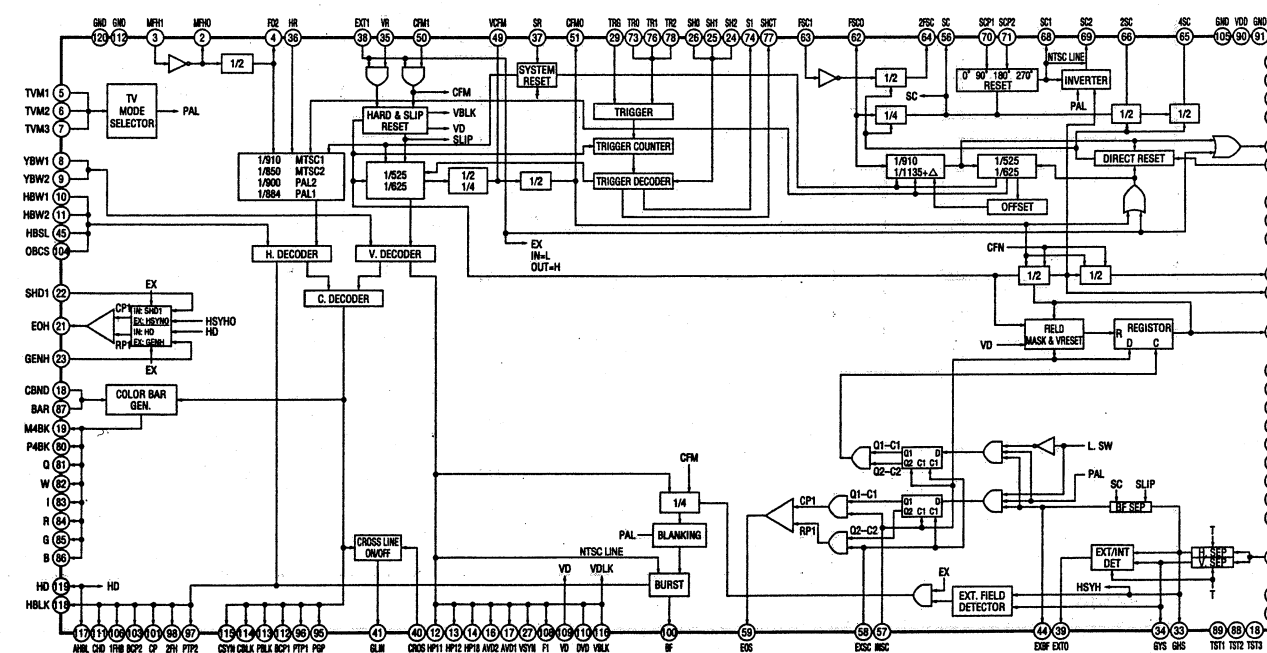
Pin 1: NULL
Pin 2: -IN
Pin 3: +IN
Pin 4: -V_S
Pin 5: NC
Pin 6: OUTPUT
Pin 7: +V_S
Pin 8: NULL

TOP VIEW

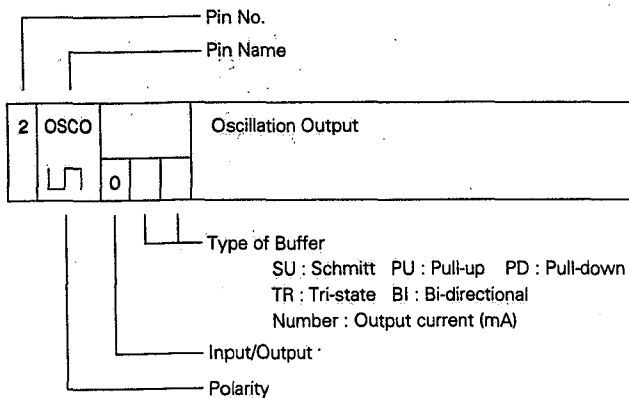
NC = NO CONNECT



91	GND	90	DDV	91	GND	60	GND
92	TST5	89	1-K0-1	92	TST5	59	EOS
93	TST6	88	2-K0-1	93	TST6	58	EXSC
94	TST7	87	3-K0-1	94	TST7	57	INSC
95	PGP	86	B	95	PGP	56	SC
96	PTP1	85	G	96	PTP1	55	DRST
97	PTP2	84	H	97	PTP2	54	TST8
98	2FH	83	I	98	2FH	53	TST9
99	FH4	82	W	99	FH4	52	TSTA
100	BF	81	Q	100	BF	51	CFM0
101	CP	80	X000-0	101	CP	50	CFM1
102	BCP1	79	X000-1	102	BCP1	49	VCFM
103	BCP2	78	0000-0	103	BCP2	48	TSTB
104	OBCS	77	1-K00-0	104	OBCS	47	TSTC
105	GND	76	1-K00-1	105	GND	46	TSTD
106	1FHB	75	0000-2	106	1FHB	45	HBSL
107	1FVS	74	0000-3	107	1FVS	44	EXBF
108	F1	73	0000-4	108	F1	43	LR
109	VD	72	0000-5	109	VD	42	TSTE
110	DVD	71	0000-6	110	DVD	41	CLIN
111	CHD	70	0000-7	111	CHD	40	CROS
112	GND	69	0000-8	112	GND	39	EXT0
113	PBLK	68	0000-9	113	PBLK	38	EXT1
114	CBLK	67	0000-10	114	CBLK	37	SR
115	CSYN	66	0000-11	115	CSYN	36	HR
116	VBLK	65	0000-12	116	VBLK	35	VR
117	AHBL	64	0000-13	117	AHBL	34	GVS
118	HBLK	63	0000-14	118	HBLK	33	GHS
119	HD	62	0000-15	119	HD	32	CS1
120	GND	61	DDV	120	GND	31	GND



Terminal Specifications of JCS0023 (4th Revision)





















Pin No.	Pin Name	Function
1	VDD	+5 Power supply
2	MFHO	Synchronizing oscillation output Output terminal for built-in oscillator
3	MFHI	Synchronizing oscillation input Input terminal for built-in oscillator
4	F02	1/2 divided output 1/2 divided output of synchronizing oscillator
5	TVM1	TV mode 1
6	TVM2	TV mode 2
7	TVM3	TV mode 3
8	VBW1	V. blanking control 1
9	VBW2	V. blanking control 2
10	HBW1	H. blanking control 1
11	HBW2	H. blanking control 2









































	NTSC1 1820FH	NTSC2 1716FH	PAL2 1816FH	PAL1 1728FH	PALM 1716FH	SECAM 1716FH
TVM1	L	H	L	H	L	H
TVM2	L	L	H	H	L	L
TVM3	L	L	L	L	H	H
















VBW1	L	H	L	H
VBW2	L	L	H	H
NTSC1	21H	20H	19H	18H
NTSC2	21H	20H	19H	18H
PAL1	26H	25H	24H	23H
PAL2	26H	25H	24H	23H
PALM	21H	20H	19H	18H
SECAM	26H	25H	24H	23H




















HBW1	L	H	L	H
HBW2	L	L	H	H
NTSC1	157T	156T	154T	152T
NTSC2	143T	147T	146T	152T
PAL1	162T	159T	156T	153T
PAL2	170T	167T	164T	161T
PALM	148T	147T	146T	144T
SECAM	162T	159T	156T	153T









Pin No.	Pin Name	Function
12	HP11	H. pulse 11 H. pulse to be active at 11H, 13H, 15H and 17H.
13	HP12	H. pulse 12 H. pulse to be active at 12H and 14H.
14	HP18	H. pulse 18 H. pulse to be active at 18H.
15	GND	Ground
16	AVD2	Pre-vertical drive pulse 2 Vertical drive pulse whose phase is 8H ahead of VD pulse. Functions as subcarrier blanking for SECAM system.
17	AVD1	Pre-vertical drive pulse 1 Vertical drive pulse whose phase is 1H ahead of VD pulse.
18	TST3	Test terminal 3 Set this terminal open in general.
19	TST4	Test terminal 4 Set this terminal open in general.
20	LSW	Line switch Half-divided FH output. Switches color difference signal of neighboring lines by 180° in phase for PAL system.
21	EOH	H. synchronizing digital phase comparison output As compared with leading edge of SHDI; when internal HD has advanced phase: Low level, when internal HD has lagged phase: High level, when internal HD is in-phase: High impedance.
22	SHDI	H. synchronizing digital phase comparison input (trailing detection) Input of horizontal drive signal originating from subcarrier. Active when EXT1 is low level. When this is inactive, GHS (No. 33) is internally connected.
23	GENH	H. synchronizing digital phase comparison input (trailing detection) Input for external synchronization, horizontal synchronization and phase adjustment. Active when EXT1 is high level. When this is inactive, HD (No. 119) is internally connected.






Pin No.	Pin Name	Function	Pin No.	Pin Name	Function
24	SHS2	Shutter speed setting 2 Random shutter setting function (Refer to the specifications.) 	35	VR	Vertical reset External synchronizing input by slip system. If this system is input in vertical sync. period, hard reset is activated. Input in other period stops internal counter for a period of pulse width. 
25	SHS1	Shutter speed setting 1 Random shutter setting function (Refer to the specifications.) 	36	HR	Horizontal reset Presets horizontal component 1T before rise of HD. Jitters in a period shorter than 140 ns are absorbed. However, operation is not secured for continuous input. 
26	SHS0	Shutter speed setting 0 Random shutter setting function (Refer to the specifications.) 	37	SR	System reset Inside of IC is forcibly initialized regardless of internal or external synchronization. VR and HR inputs are ineffective. Jitters in a period shorter than 140 ns are absorbed. 
27	VSYN	V. sync. output Vertical synchronizing signal of V. EQ pulse width. 	38	EXTI	Internal/External synchronization setting input L : Internal synchronization H : External synchronization 
28	TR2	Sync. reset mode setting For sync. reset mode setting when random shutter setting functions is activated. 	39	EXTO	Internal/External synchronization setting output L: Without CSI input After detection of no SHS, another SHS is not detected for a period of 8 fields. H: With CSI input After detection of SHS, 200 or more SHS's are detected in 1 vertical period. 
29	TRG	Trigger input Trigger input to activate random shutter setting function. (Refer to the random shutter specifications.) 	40	CROS	Cross ON/OFF input L: To stop cross output H: To activate cross output operation For detail, refer to supplementary specifications of respective terminals. 
30	VDD	+5V power supply	41	CLIN	Cross output To output a cross in the center of screen. For detail, refer to supplementary specifications of respective terminals. 
31	GND	Ground	42	TSTE	Test terminal E Set this terminal open in general. 
32	CSI	Ext. composite sync. signal input To input external composite synchronizing signal for horizontal and vertical separation and ext. sync. signal input detection. 	43	LR	Line reset When EXTI is external synchronization (High level), setting signal is supplied to LSW. When internal burst is ahead of external burst in phase, High level is output. When internal burst is behind external burst in phase, Low level is output (for 6 clocks of SC). Phase comparison is not operated for one field after output. For detail, refer to supplementary specifications of respective terminals. 
33	GHS	Horizontal separate sync. Horizontal separate signal of external composite synchronizing signal. 1/2 equivalent pulse is not included. 			
34	GVS	Vertical separate sync. Vertical separate signal of external composite synchronizing signal. 1/2 equivalent pulse is not included. 			

Pin No.	Pin Name	Function	Pin No.	Pin Name	Function
44	EXBF	Burst flag separate output With detection of one or more H. sync pulse from CSI input, pulse whose width is for 6 cycles of subcarrier is output. For details, refer to supplementary specifications of respective terminals.	54	TST8	Test terminal 8 Set this terminal open in general.
					
45	HBSL	H. blanking reset To switch output position of IFHB (106). L: System delay 900 ns approx. H: System delay 450 ns approx.	55	DRST	Direct reset terminal When EXTI is low level, the following operations are realized. To switch reset operation of horizontal counter for subcarrier. To reset color frame synchronizing with horizontal counter with High level; To reset color frame with Low level.
					
46	TSTD	Test terminal D Set this terminal open in general.			
			56	SC	Subcarrier output To monitor subcarrier signal connected internally with digital phase comparator. When phase of SC1 (68) is 0°, this output is inphase.
47	TSTC	Test terminal C Set this terminal open in general.			
			57	INSC	Internal subcarrier input Shall be connected with SC (56). Effective when EXBF is low level. Pulse rise is detected.
48	TSTB	Test terminal B Set this terminal open in general.			
			58	EXSC	External subcarrier input Effective when EXBF is low level. Pulse rise is detected.
49	VCFM	VTR color frame Color frame for VTR exclusively. 2-field period for NTSC1, NTSC2 and PAL. 4-field period for PAL1, PAL2 and SECAM.			
			59	EOS	Digital phase comparison output for subcarrier As compared with leading edge of EXSC; when internal SC has advanced phase : Low level, when internal SC has lagged phase : High level, when internal SC is in phase : High impedance.
50	CFMI	Color frame input Effective with EXTI being low level. Used for color frame control in external synchronization. Reset to synchronizing circuit by the slip system.			
			60	GND	Ground
51	CFMO	Color frame output Pulse output at the beginning of every color frame. 4-field period for NTSC1 and NTSC2. 8-field period for PAL1, PAL2, PALM and SECAM.	61	VDD	+5V power supply
			62	FSCO	Oscillator output for subcarrier  
52	TSTA	Test terminal A Set this terminal open in general.	63	FSCI	Oscillator input for subcarrier  
			64	2FSC	Double subcarrier output Half-divided oscillator output for subcarrier
53	TST9	Test terminal 9 Set this terminal open in general.			
					

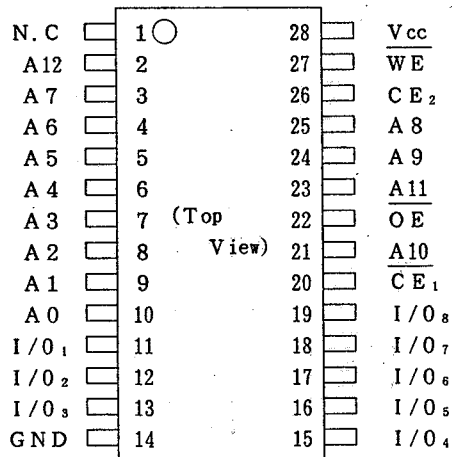
Pin No.	Pin Name	Function	Pin No.	Pin Name	Function																																																																																					
65	4SC	1/4 subcarrier output 1/4-divided output of subcarrier frequency 	75	GND	Ground																																																																																					
66	2SC	1/2 subcarrier output 1/2-divided output of subcarrier frequency 	76	TR1	Random reset system setting input To determine reset system setting system. L: SYNC reset system, H: SYNC non-reset system. (Refer to the specifications of random shutter setting function.)																																																																																					
67	GND	Ground																																																																																								
68	SC1	Subcarrier 1 Subcarrier frequency output. Phase is changed by SCP1 and SCP2. In PAL mode, phase is not changed every H. 	77	SHCT	Shutter control output Electronic shutter control signal. Shall be connected to SHCT (19) of TG (μPD9438GK). (Refer to the specifications of random shutter setting function.)																																																																																					
69	SC2	Subcarrier 2 Subcarrier frequency output whose phase is 90° ahead of SC1. Phase is changed by SCP1 and SCP2. In PAL mode, phase is inverted by 180° every H. 	78	CBMD	SMPTE/FULL To switch color bar signal to SMPTE or FULL. L: Full Field mode H: SMPTE mode																																																																																					
70	SCP1	Subcarrier select 1 Note: SC2 is expressed based on SC1. <table border="1" data-bbox="370 1095 726 1330"><thead><tr><th>SCP2</th><th>SCP1</th><th>SC1</th><th>SC2</th></tr></thead><tbody><tr><td>L</td><td>L</td><td>0°</td><td>90° ahead (270°)</td></tr><tr><td>L</td><td>H</td><td>90°</td><td>90° ahead (0°)</td></tr><tr><td>H</td><td>L</td><td>180°</td><td>90° ahead (90°)</td></tr><tr><td>H</td><td>H</td><td>270°</td><td>90° ahead (180°)</td></tr></tbody></table> 	SCP2	SCP1	SC1	SC2	L	L	0°	90° ahead (270°)	L	H	90°	90° ahead (0°)	H	L	180°	90° ahead (90°)	H	H	270°	90° ahead (180°)	79	M4BK	Color bar signal <table border="1" data-bbox="1040 1016 1426 1487"><thead><tr><th></th><th>BAR</th><th>CBMD</th><th>I</th><th>W</th></tr></thead><tbody><tr><td>NTSC1</td><td>H</td><td>X</td><td>L</td><td>L</td></tr><tr><td>NTSC2</td><td>L</td><td>H</td><td>Effective</td><td>Effective (75%W)</td></tr><tr><td></td><td>L</td><td>L</td><td>L</td><td>L</td></tr><tr><td>PAL1</td><td>H</td><td>X</td><td>L</td><td>L</td></tr><tr><td>PAL2</td><td>L</td><td>H</td><td>Effective</td><td>Effective (75%W)</td></tr><tr><td></td><td>L</td><td>L</td><td>L</td><td>Effective (100W)</td></tr><tr><td>PALM</td><td>H</td><td>X</td><td>L</td><td>L</td></tr><tr><td></td><td>L</td><td>H</td><td>Effective</td><td>Effective (75%W)</td></tr><tr><td></td><td>L</td><td>L</td><td>L</td><td>Effective (100W)</td></tr><tr><td>SECAM</td><td>H</td><td>X</td><td>L</td><td>L</td></tr><tr><td></td><td>L</td><td>H</td><td>Effective</td><td>Effective (75%W)</td></tr><tr><td></td><td>L</td><td>L</td><td>L</td><td>L</td></tr></tbody></table> 		BAR	CBMD	I	W	NTSC1	H	X	L	L	NTSC2	L	H	Effective	Effective (75%W)		L	L	L	L	PAL1	H	X	L	L	PAL2	L	H	Effective	Effective (75%W)		L	L	L	Effective (100W)	PALM	H	X	L	L		L	H	Effective	Effective (75%W)		L	L	L	Effective (100W)	SECAM	H	X	L	L		L	H	Effective	Effective (75%W)		L	L	L	L
SCP2	SCP1	SC1	SC2																																																																																							
L	L	0°	90° ahead (270°)																																																																																							
L	H	90°	90° ahead (0°)																																																																																							
H	L	180°	90° ahead (90°)																																																																																							
H	H	270°	90° ahead (180°)																																																																																							
	BAR	CBMD	I	W																																																																																						
NTSC1	H	X	L	L																																																																																						
NTSC2	L	H	Effective	Effective (75%W)																																																																																						
	L	L	L	L																																																																																						
PAL1	H	X	L	L																																																																																						
PAL2	L	H	Effective	Effective (75%W)																																																																																						
	L	L	L	Effective (100W)																																																																																						
PALM	H	X	L	L																																																																																						
	L	H	Effective	Effective (75%W)																																																																																						
	L	L	L	Effective (100W)																																																																																						
SECAM	H	X	L	L																																																																																						
	L	H	Effective	Effective (75%W)																																																																																						
	L	L	L	L																																																																																						
71	SCP1	Subcarrier select 2 	80	P4BK	Color bar signal 																																																																																					
72	SCHD	Subcarrier horizontal driver Horizontal drive pulse originating from subcarrier frequency. 	81	Q	Color bar signal 																																																																																					
73	TR0	Random shutter control system setting input To set random shutter control system. L: 8-stage default control, H: Pulse width continuous control (Refer to the specifications of random shutter setting function.) 	82	W	Color bar signal 																																																																																					
74	SI	Stroboscope index output In normal operation, this output is for stroboscopic lamp emitting time. In random shutter operation, this output is for video output time. (Refer to the specifications of random shutter setting function.) 	83	I	Color bar signal 																																																																																					

Pin No.	Pin Name	Function	Pin No.	Pin Name	Function																		
84	-R	Color bar signal  0 9	95	PGP	Pilot gate pulse  0 9 Uniform voltage level of two signals, one passes the 1FH delay line and the other does not pass the 1H line, with each other in order to compensate attenuation caused by the delay line.																		
85	G	Color bar signal  0 9	96	PTP1	Pilot pulse 1  0 9 Uniform voltage level of two signals, one passes the 1H delay line and the other does not pass the 1H line, with each other in order to compensate attenuation caused by the delay line.																		
86	B	Color bar signal  0 9	97	PTP2	Pilot pulse 2  0 9 Used to control video level.																		
87	BAR	Color bar control (ON/OFF)  I PU <table><tr><td>BAR</td><td>R, G, B, I, Q, W, P4BK, M4BK</td></tr><tr><td>L</td><td>Effective</td></tr><tr><td>H</td><td>Fixed at Low level</td></tr></table>	BAR	R, G, B, I, Q, W, P4BK, M4BK	L	Effective	H	Fixed at Low level	98	2FH	Double FH  0 9 <table><tr><td>NTSC1</td><td>NTSC2</td><td>PAL1</td><td>PAL2</td><td>PALM</td><td>SECAM</td></tr><tr><td>31.468</td><td>31.468</td><td>31.25</td><td>31.25</td><td>31.468</td><td>31.25</td></tr></table>	NTSC1	NTSC2	PAL1	PAL2	PALM	SECAM	31.468	31.468	31.25	31.25	31.468	31.25
BAR	R, G, B, I, Q, W, P4BK, M4BK																						
L	Effective																						
H	Fixed at Low level																						
NTSC1	NTSC2	PAL1	PAL2	PALM	SECAM																		
31.468	31.468	31.25	31.25	31.468	31.25																		
88	TST2	Test terminal 2  I PU Set this terminal open in general.	99	FH4	1/4FH  0 9 Half-divided output of LSW. Equivalent to 25 Hz in PAL mode.																		
89	TST1	Test terminal 1  I PU Set this terminal open in general.	100	BF	Burst flag  0 9 Regulates period to insert subcarrier into back porch of horizontal sync. signal. Functions to switch chromaticity signal for every line in SECAM mode.																		
90	VDD	+5V power supply	101	CP	Clamp pulse  0 9 Signal to clamp reference voltage of black level.																		
91	GND	Ground	102	BCP1	Black clamp pulse 1  0 9 Fixes black level of CCD output signal.																		
92	TST5	Test terminal 5  I PU Set this terminal open in general.	103	BCP2	Black clamp pulse 2  0 9 Fixes black level of CCD output signal (at every H output).																		
93	TST6	Test terminal 6  I PU Set this terminal open in general.	104	OBCS	Optical black pulse select  I PU Switching of output position of horizontal BCP1 and BCP2. L: Frontward output H: Backward output																		
94	TST7	Test terminal 7  0 9 Set this terminal open in general.																					

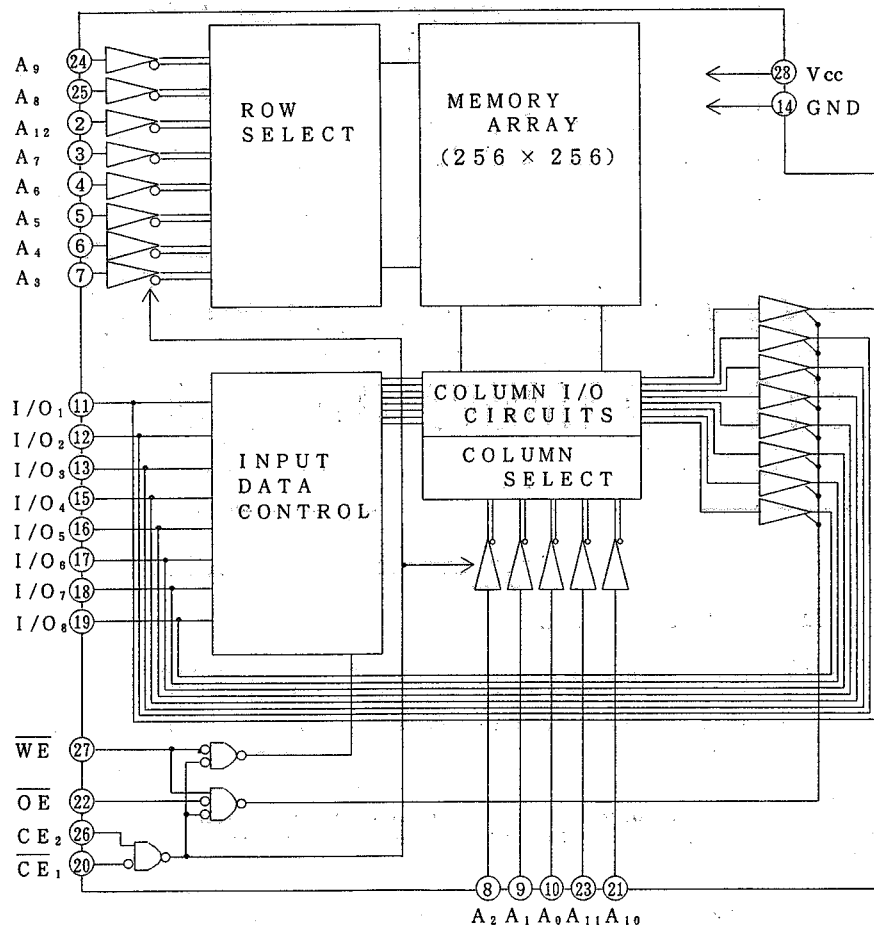
Pin No.	Pin Name	Function
105	GND	Ground
106	IFHB	Interface horizontal blanking Output pulse that is narrower than HBLK both in leading edge and trailing edge.  0 9
107	IFVS	Interface vertical synchronization Normal function: To output vertical synchronization signal having the same pulse width of V. EQ pulse. Random shutter setting function: To output the same signal as V. sync. signal in the fall-time.  0 9
108	FI	Field index Field discrimination signal. L: Field that HD and VD fall at the same time. H: Field that there is a time lag of 0.5H in falling between HD and VD.  0 9
109	VD	Vertical drive pulse Pulse output at the beginning of every field. Used as the vertical timing standard for the set.  0 9
110	DVD	Delayed vertical drive pulse Vertical drive signal that lags behind VD pulse. Controls camera's scanning timing and regulates activation time of sawtooth waveform of vertical deflection circuit.  0 9
111	CHD	Delayed horizontal drive pulse Controls camera's scanning timing. Regulates activation time of sawtooth waveform of horizontal deflection circuit.  0 9
112	GND	Ground
113	PBLK	Pre-blanking Composite blanking signal used for video processing. As compared with CBLK signal, this signal is narrower in the leading edge.  0 9
114	CBLK	Composite blanking Horizontal and vertical composite blanking signal.  0 9

Pin No.	Pin Name	Function
115	CSYN	Composite sync. Composite synchronizing signal comprising of four signals of HSYN, VSYN, EQ and SAW.  0 9
116	VBK	V. blanking Vertical blanking signal whose pulse width can be changed with VBW1 and VBW2.  0 9
117	AHBL	Pre-horizontal blanking Pulse that HBLK is advanced in breaking of leading edge.  0 9
118	HBLK	H. blanking Horizontal blanking pulse whose pulse width can be changed with HBW1 and HBW2.  0 9
119	HD	H. drive Pulse synchronized with beginning of respective lines. Used as horizontal timing standard of the set.  0 13
120	GND	Ground

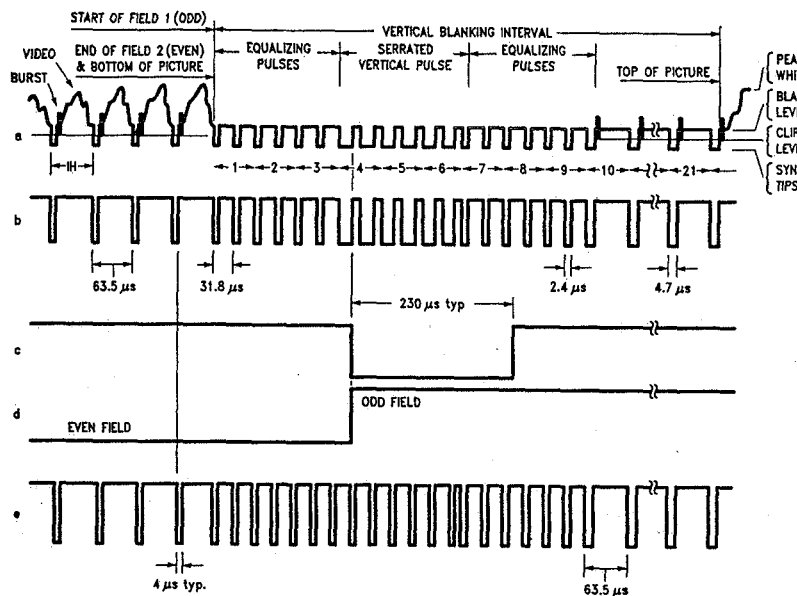
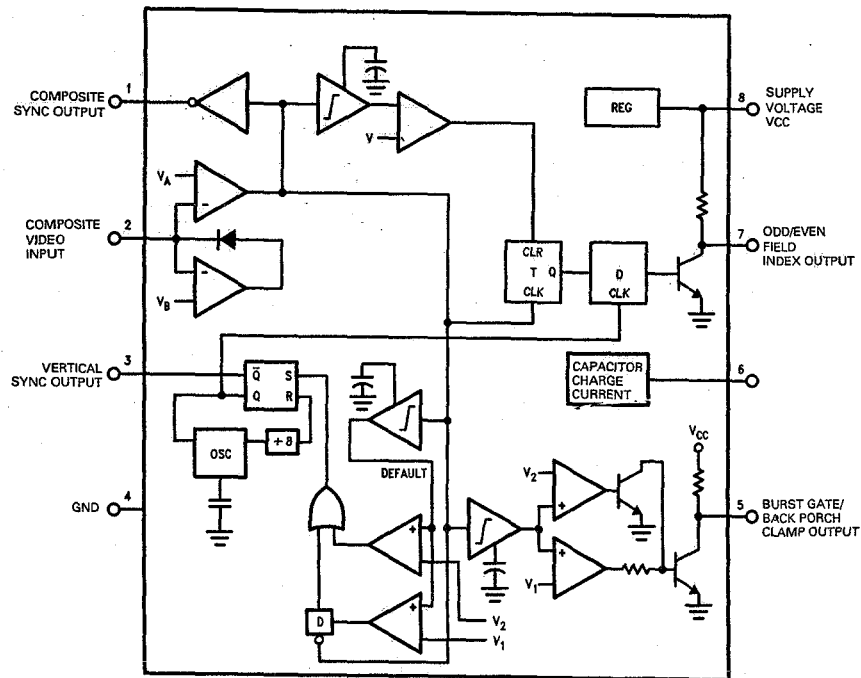
■ LH5168N-10L [SHARP]
(64K SRAM)



Name	Signal
A ₀ ~ A ₁₂	Address Input
CE ₁ /CE ₂	Chip Enable
WE	Write Enable
OE	OUTPUT
I/O ₁ ~ I/O ₈	Data I/O
N. C.	Non Connection

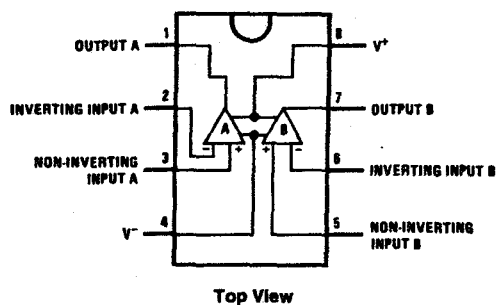


■ **LM1881M** [National Semiconductor]
(Video Sync Separator)

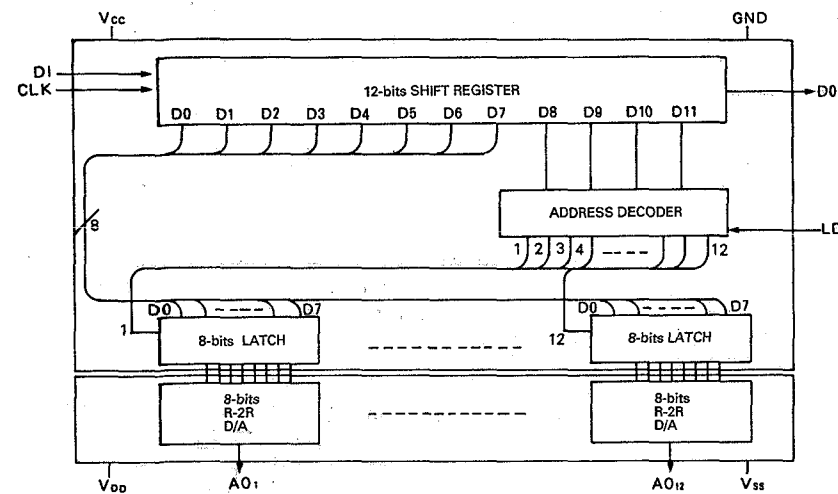
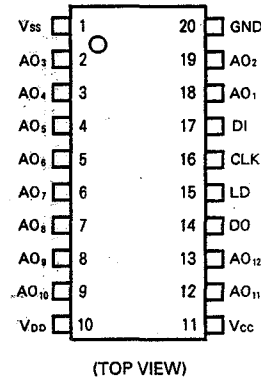


(a) Composite Video; (b) Composite Sync; (c) Vertical Output Pulse;
(d) Odd/Even Field Index; (e) Burst Gate/Back Porch Clamp

■ **LMC6082IM** [National Semiconductor]
(Precision CMOS Dual Op.Amp)

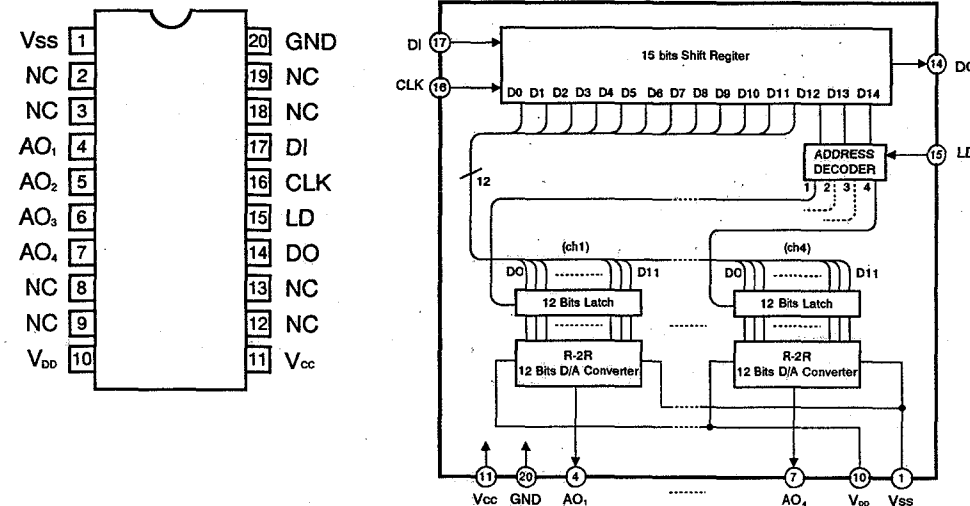


■ MB88341PV [FUJITSU]
(D/A Converter)



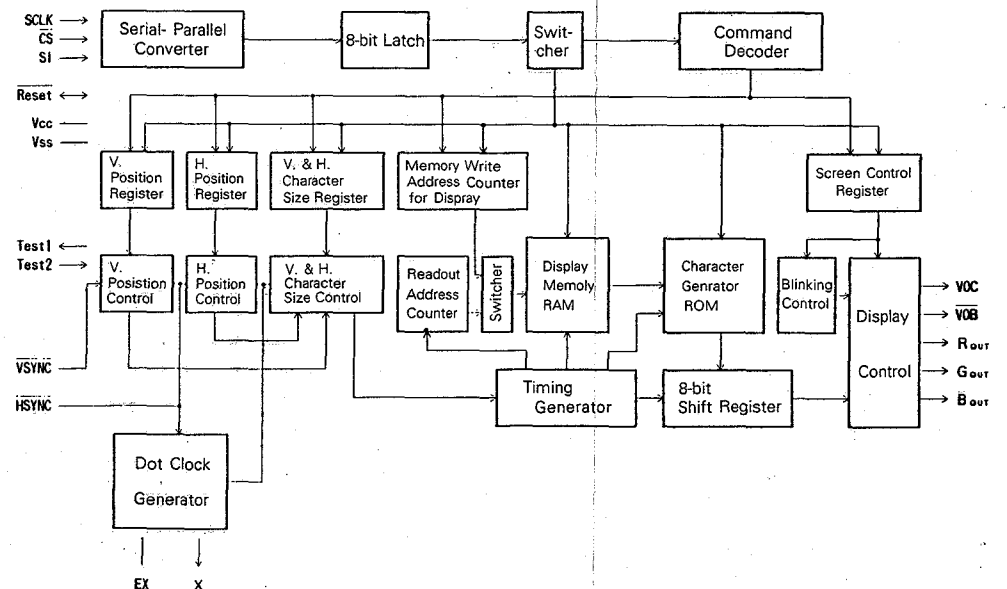
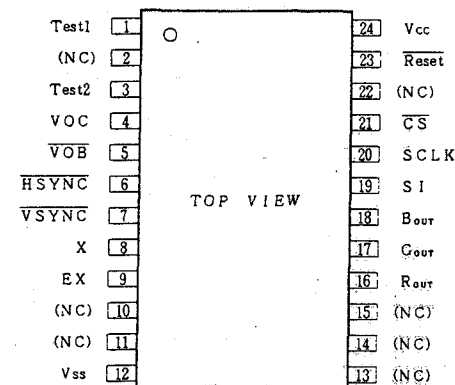
Symbol	Pin No.	I/O	Function
	MB88341		
DI	17	I	For serial data (12 bits) input.
DO	14	O	For MSB data output of 12-bit shift register.
CLK	16	I	For shift clock input. Signal from DI pin is input to 12-bit shift register.
LD	15	I	With "H" input to LD pin, data of 12-bit shift register is loaded to decoder and D/A output register.
AO1 AO2 AO3 AO4 AO5 AO6 AO7 AO8 AO9 AO10 AO11 AO12	18 19 2 3 4 5 6 7 8 9 12 13	O	For 8-bits D/A output.
Vcc	11	—	Power source of MCU interface.
GND	20	—	GND of MCU interface
VDD	10	—	Power source of D/A converter.
Vss	1	—	GND of D/A converter.

■ MB88353PFV [FUJITSU]
(4 Ch 12 Bit D/A Converter)

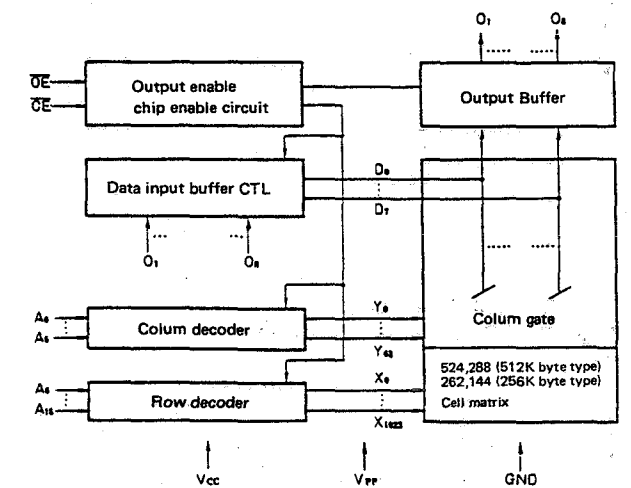
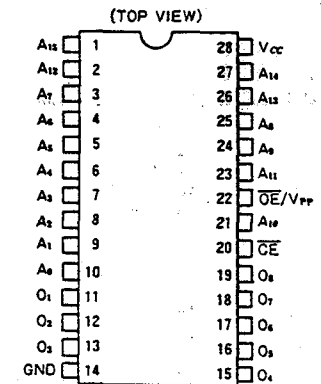


Symbol	Pin No.	I/O	Description
	MB88341		
DI	17	I	For serial data (15-bit) input.
DO	14	O	For MSB data output of 15-bit shift register.
CLK	16	I	For shift clock input. Signal from DI pin is input to 15-bit shift register.
LD	15	I	With "H" input to LD pin, data of 15-bit shift register is loaded to decoder and D/A output register.
AO1 AO2 AO3 AO4	4 5 6 7	O	For 12-bits D/A output.
Vcc	11	—	Power source of MCU interface.
GND	20	—	GND of MCU interface.
VDD	10	—	Power source of D/A converter.
Vss	1	—	GND of D/A converter.

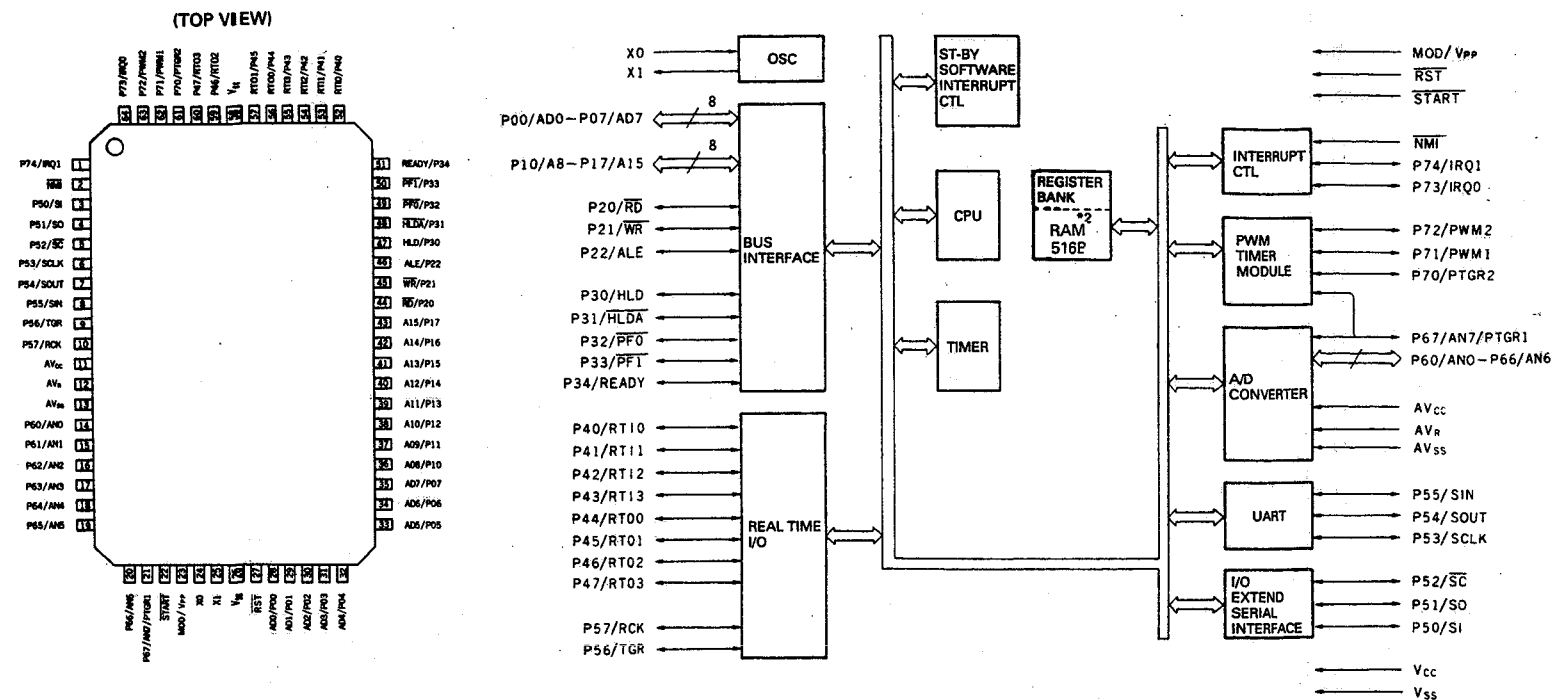
■ MB89012-109 [FUJITSU]
(TV Display Controller)



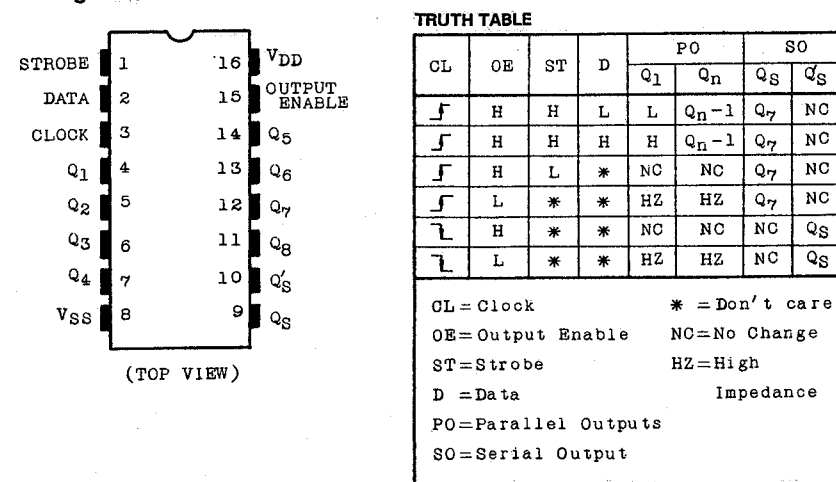
■ MBM27C512P-15 [FUJITSU]
(512K (64K × 8Bit) EPROM)



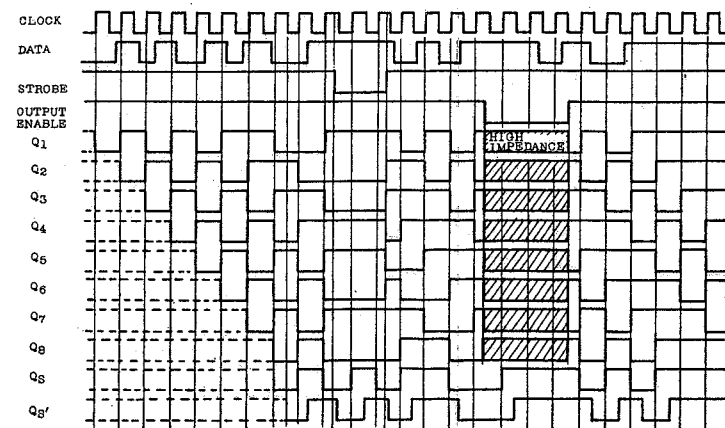
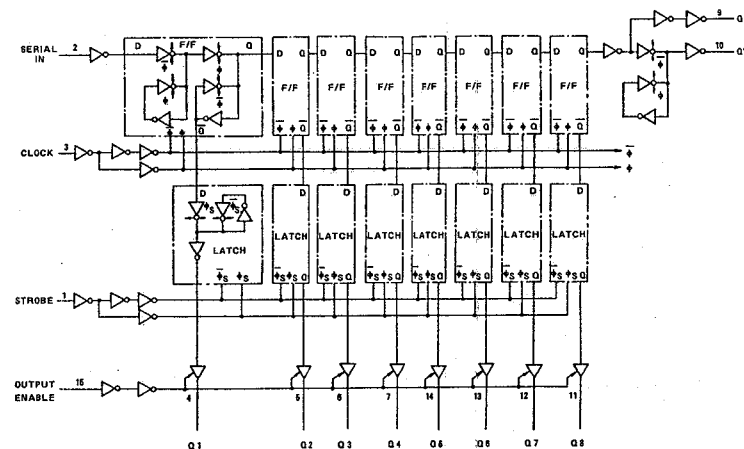
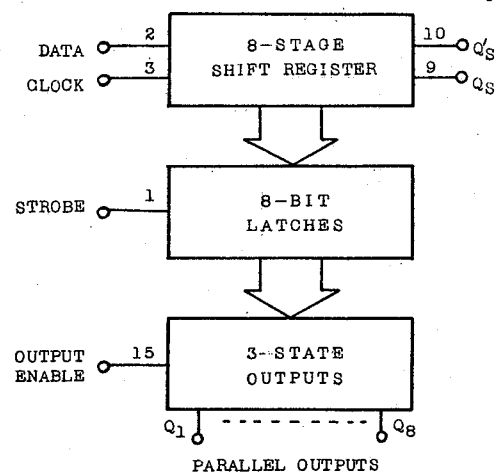
■ **MB89T715AHPF** [MOTOROLA]
(8 Bit Micro Controller)



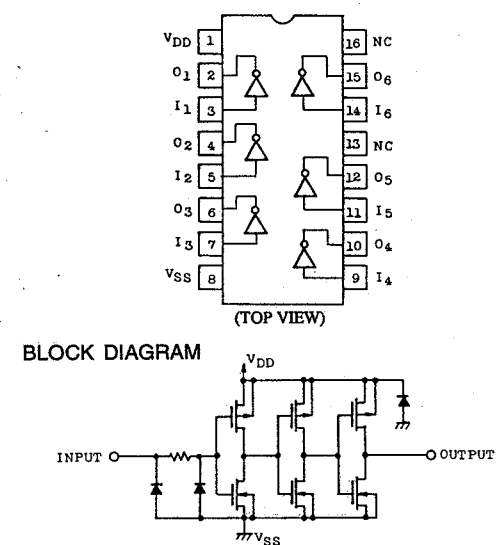
■ **MC14094BF** [MOTOROLA]
(8 Stage Bus Compatible Shift/Store Register)



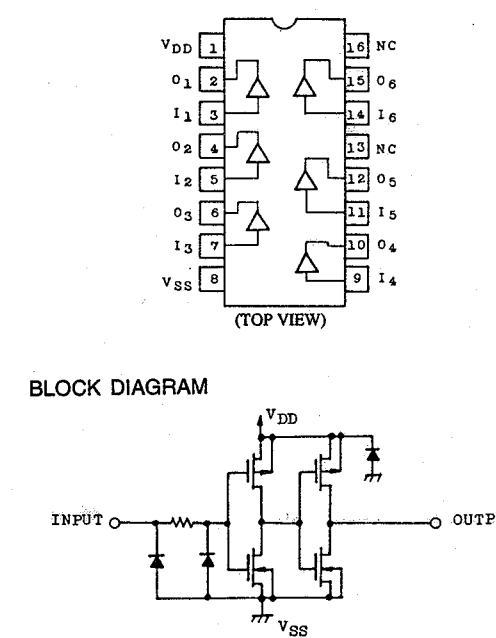
BLOCK DIAGRAM



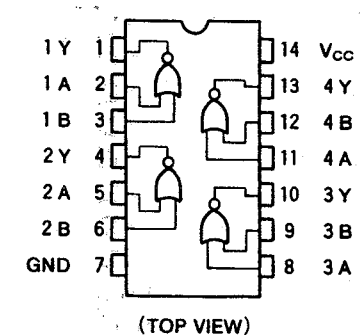
■ **MC14049UBCP** [MOTOROLA]
(Hex Inverting Buffer)



■ **MC14050BFL** [MOTOROLA]
(Hex Non Inverting Buffer)



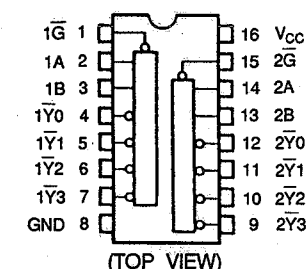
■ **MC74HC02AF** [MOTOROLA]
(Quad 2-Input NOR Gates)



TRUE Table

A	B	Y
L	L	H
L	H	L
H	L	L
H	H	L

■ **MC74HC139AF** [MOTOROLA]
(Dual 2-Line to 4-Line Decoders/Demultiplexers)

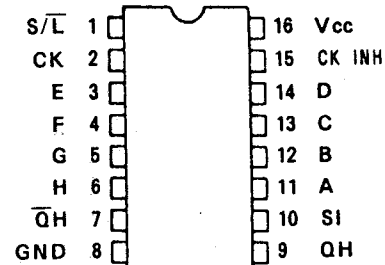


TRUE Table

INPUTS			OUTPUTS				SELECTED OUTPUT
ENABLE	SELECT		Y0	Y1	Y2	Y3	
H	X	X	H	H	H	H	NONE
L	L	L	L	H	H	H	Y0
L	L	H	H	L	H	H	Y1
L	H	L	H	H	L	H	Y2
L	H	H	H	H	H	L	Y3

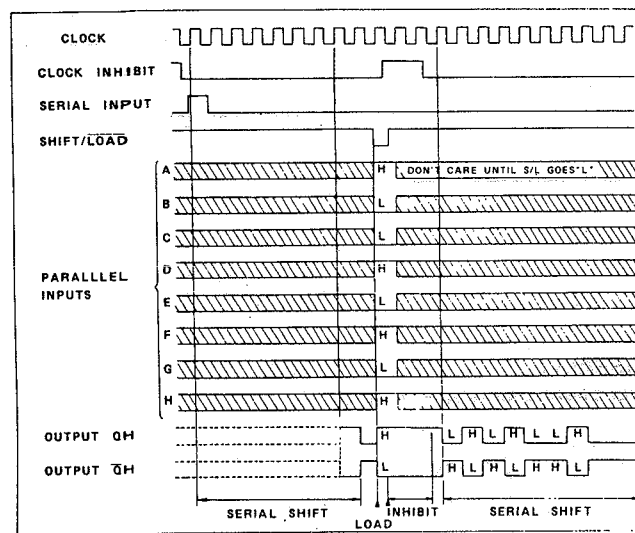
X: Don't care

■ MC74HC165F [MOTOROLA]
(8-Bit Serial or Parallel-In/Serial Out
Shift Registers With Complementary Out)

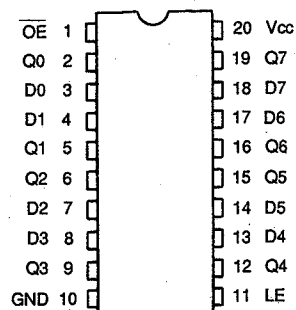


(TOP VIEW)

Timing chart



■ MC74HC373AF [MOTOROLA]
(Octal D-Type Latch With NON-Inverted
3-State Output)

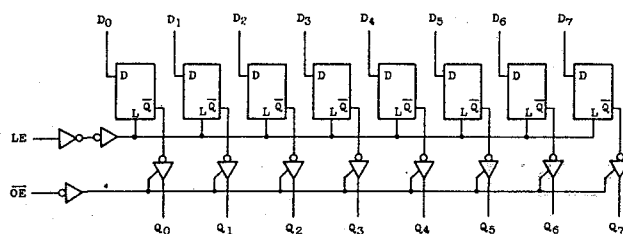


(Top View)

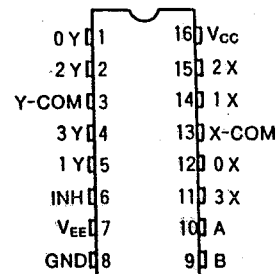
TRUE Table

INPUTS			OUTPUTS
OE	LE	D	
H	X	X	Z
L	L	X	Q _n
L	H	L	L
L	H	H	H

X : Don't Care
Z : Hi impedance
Q_n : Q output level before the LE become "L".



■ MC74HC4052F [MOTOROLA]
(Dual 4-Channel Analog Multiplexer)

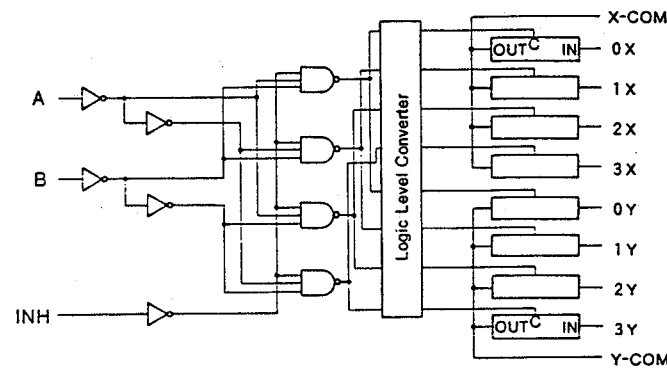


(TOP VIEW)

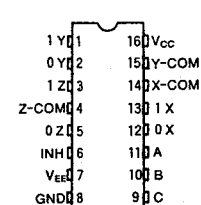
TRUE Table

CONTROL INPUTS			"ON" CHANNEL
INHIBIT	B	A	HC4052A
L	L	L	0X, 0Y
L	L	H	1X, 1Y
L	H	L	2X, 2Y
L	H	H	3X, 3Y
H	X	X	NONE

X : DON'T CARE



■ MC74HC4053F [MOTOROLA]
(Triple 2-Channel Analog Multiplexer/
Demultiplexer)

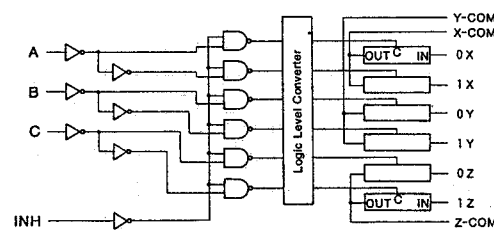


(TOP VIEW)

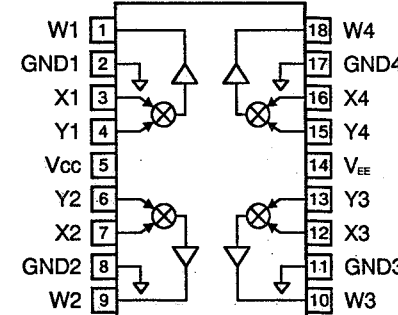
TRUE Table

CONTROL INPUTS				"ON" CHANNEL
INHIBIT	C*	B	A	HC4053A
L	L	L	L	0X, 0Y, 0Z
L	L	L	H	1X, 0Y, 0Z
L	L	H	L	0X, 1Y, 0Z
L	L	H	H	1X, 1Y, 0Z
L	H	L	L	0X, 0Y, 1Z
L	H	L	H	1X, 0Y, 1Z
L	H	H	L	0X, 1Y, 1Z
L	H	H	H	1X, 1Y, 1Z
H	X	X	X	NONE

X : DON'T CARE

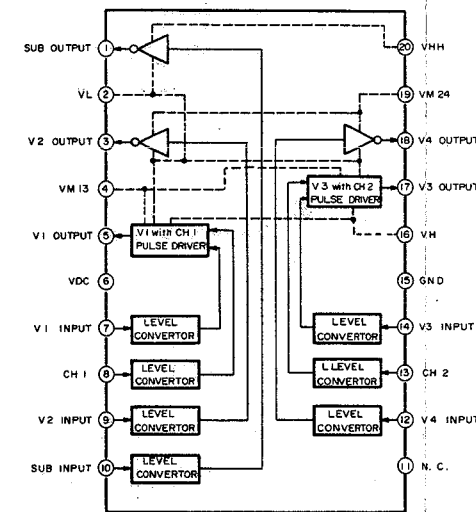


■ MLT04GS [ANALOG DEVICES]
(4 Channel Multiplexer)



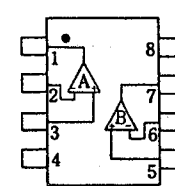
$$W = (X \cdot Y) / 2.5V$$

■ MN3112SA [MATSUSHITA]
(Vertical Driver)

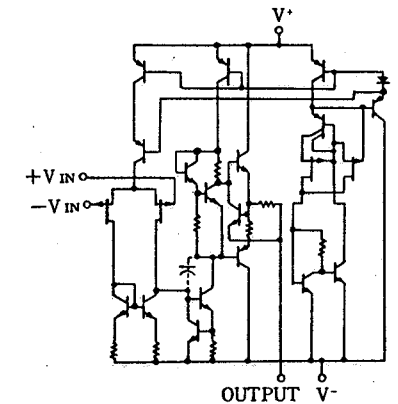


■ NJM062M [JRC]
(J-FET Input Op.Amp)

(Top View)

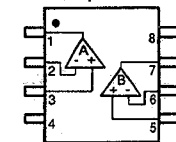


1. A OUTPUT
2. A-INPUT
3. A+INPUT
4. V-
5. B+INPUT
6. B-INPUT
7. B OUTPUT
8. V+

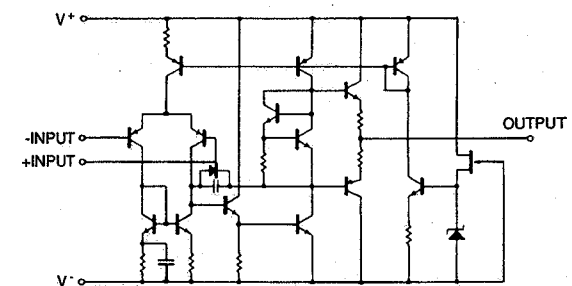


■ NJM4560MD [JRC]
(Dual Op.Amp)

(Top View)

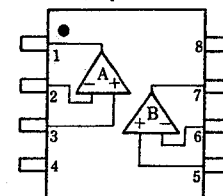


1. A OUTPUT
2. A-INPUT
3. A+INPUT
4. V-
5. B+INPUT
6. B-INPUT
7. B OUTPUT
8. V+

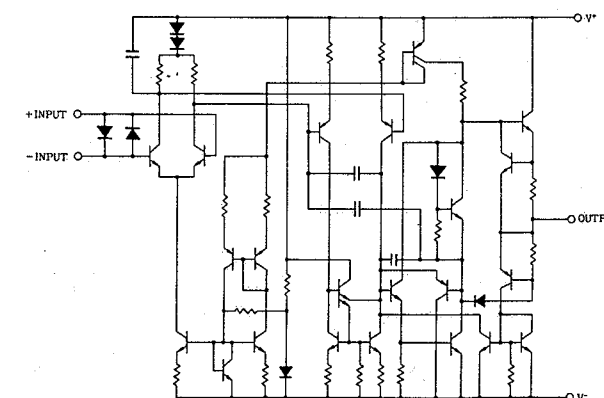


■ NJM5532M [JRC]
(High Performance Dual Low-Noise Op.Amp)

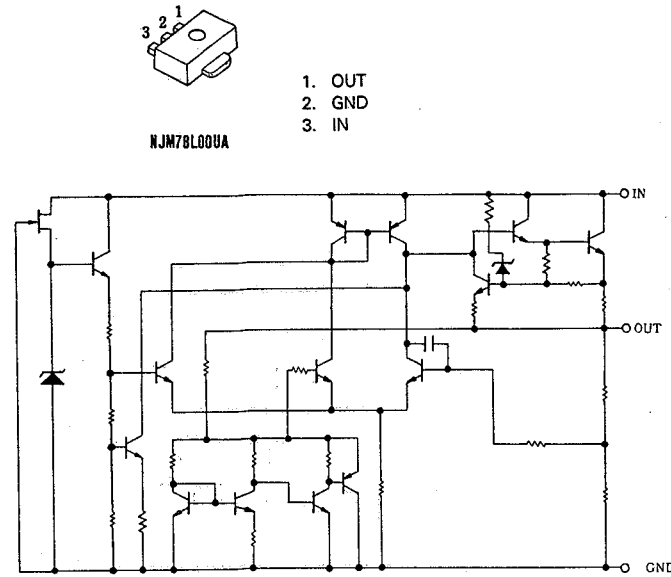
(Top View)



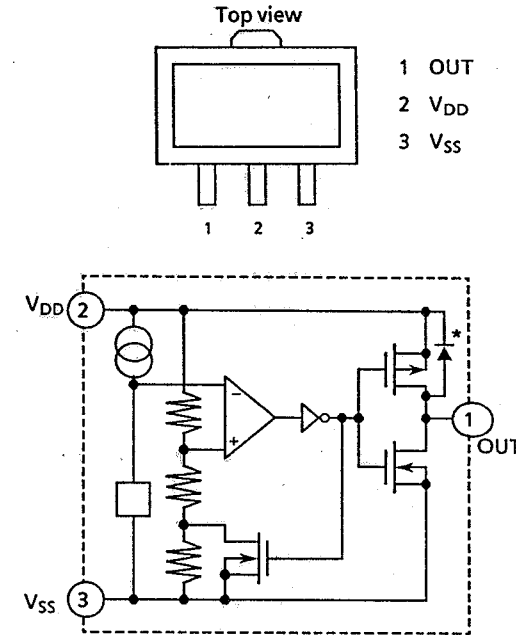
1. A OUTPUT
2. A-INPUT
3. A+INPUT
4. V-
5. B+INPUT
6. B-INPUT
7. B OUTPUT
8. V+



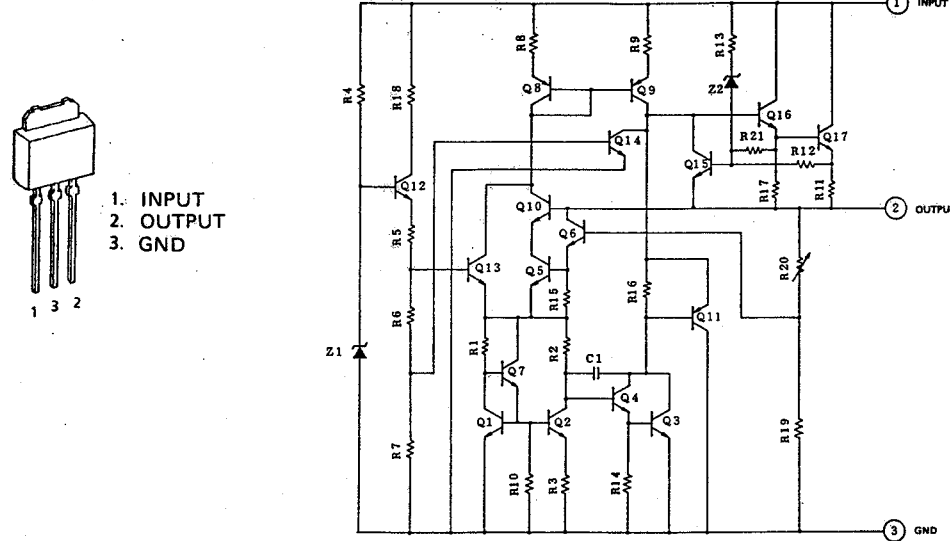
■ NJM78L09UA [JRC]
(3-Terminal Positive Voltage Regulator
(+9V))



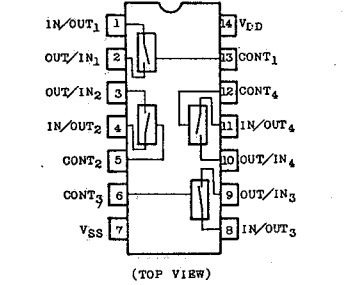
■ S-8054HNCB [SEIKO INSTRUMENTS]
(C-MOS Voltage Detector)



■ TA7809F [TOSHIBA]
(3-Terminal Positive Voltage Regulator
(+9V))

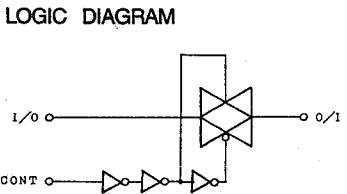


■ TC4066BF [TOSHIBA]
(Quad Bilateral Switch)



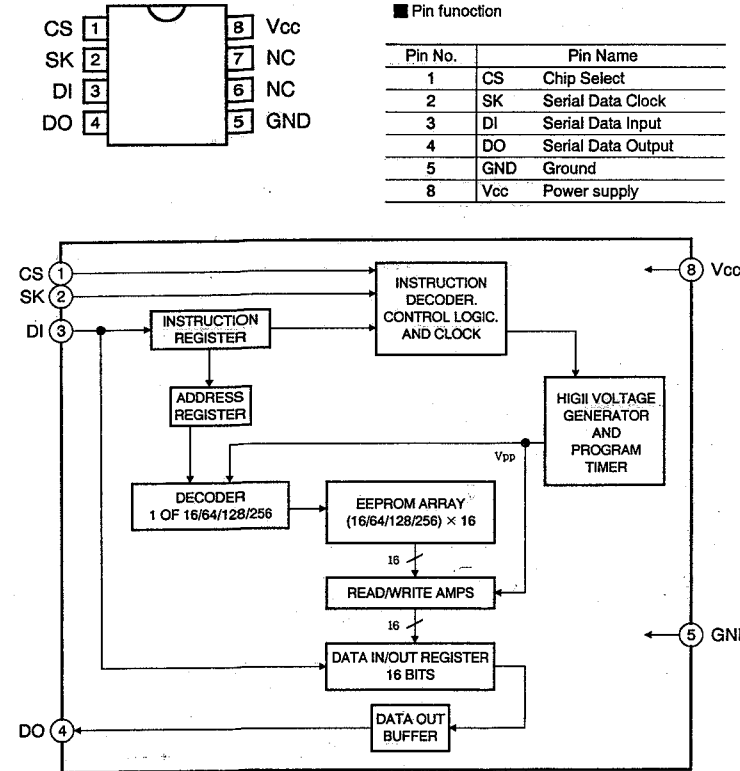
TRUTH TABLE

CONTROL	Impedance Between IN/OUT-OUT/IN *
H	$0.5 \sim 5 \times 10^2 \Omega$
L	$> 10^9 \Omega$

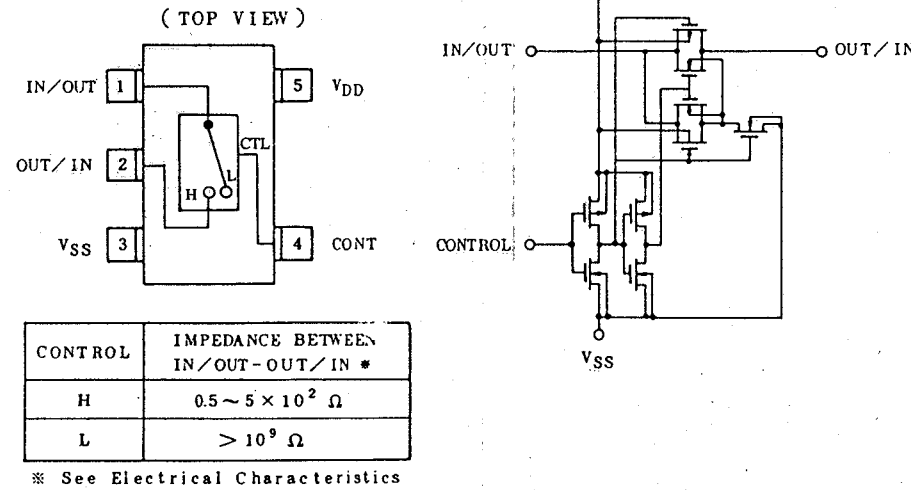


■ NJM78L15UA [JRC]
(Refer to NJM78L09UA.)

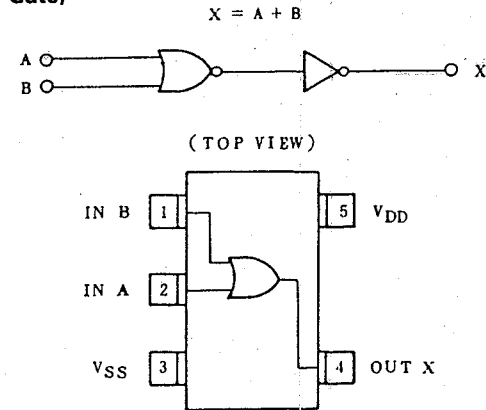
■ NM93C66M8X [National Semi Conductor]
(4096-Bit Serial EEPROM)



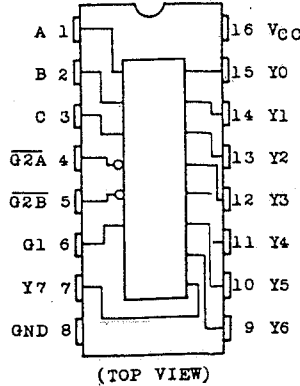
■ TC4S66F [TOSHIBA]
(Bilateral Switch)



■ TC4S71F [TOSHIBA]
(2-Input OR Gate)



■ TC74HC238AF [TOSHIBA]
(3-Line to 8-Line Decoders/Demultiplexers)



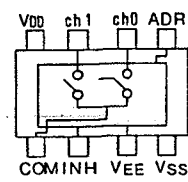
TRUE Table

INPUTS						OUTPUTS								SELECTED OUTPUT
ENABLE			SELECT			Y0	Y1	Y2	Y3	Y4	Y5	Y6	Y7	
02B	02A	01	C	B	A									
X	X	L	X	X	X	L	L	L	L	L	L	L	L	NONE
X	X	L	X	X	X	L	L	L	L	L	L	L	L	NONE
X	X	L	X	X	X	L	L	L	L	L	L	L	L	NONE
L	L	H	L	L	L	L	L	L	L	L	L	L	L	Y0
L	L	H	L	L	L	L	L	L	L	L	L	L	L	Y1
L	L	H	L	L	L	L	L	L	L	L	L	L	L	Y2
L	L	H	L	L	L	L	L	L	L	L	L	L	L	Y3
L	L	H	H	L	L	L	L	L	L	H	L	L	L	Y4
L	L	H	H	L	L	L	L	L	L	L	H	L	L	Y5
L	L	H	H	H	L	L	L	L	L	L	L	H	L	Y6
L	L	H	H	H	H	L	L	L	L	L	L	L	H	Y7

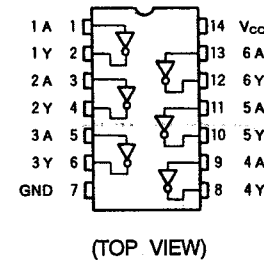
X : DON'T CARE

■ TC74HC4052AF [TOSHIBA]
(Refer to MC74HC4052F.)

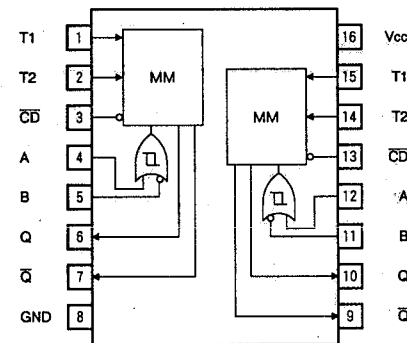
■ TC4W53F [TOSHIBA]
(2-Channel Multiplexer)



■ TC74HC04AF [TOSHIBA]
(Hex Inverters)



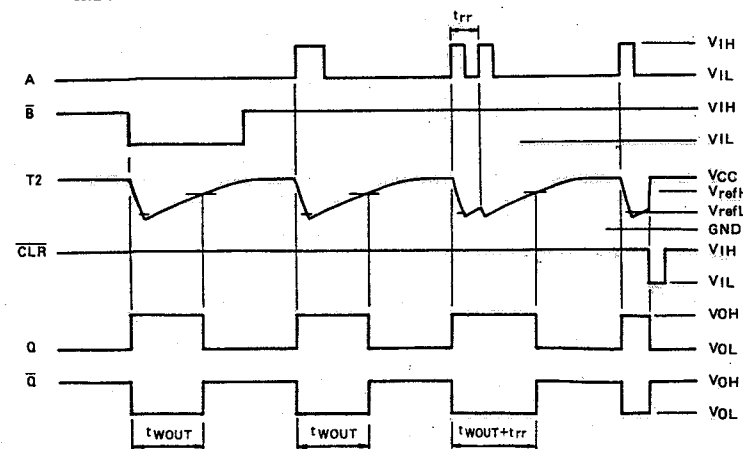
■ TC74HC4538AF [TOSHIBA]
(Dual Retriggerable Monostable Multivibrator)



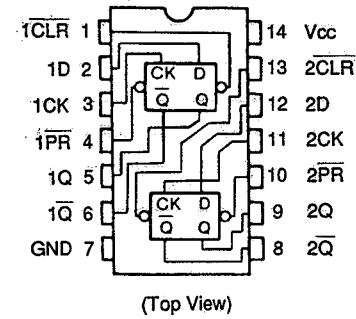
TRUE Table

INPUT			OUTPUT		NOTE
A	B	CD	Q	Q-bar	
	H	H			OUTPUT ENABLE
X	L	H	L	H	INHIBIT
H	X	H	L	H	INHIBIT
L		H			OUTPUT ENABLE
X	X	L	L	H	INHIBIT

X: Don't Care



■ TC74VHC74FS [TOSHIBA]
(Dual D-Type Positive-EDGE-Triggered Flip-Flops With Preset AND Clear)

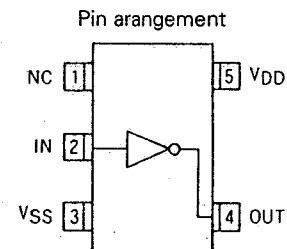


TRUE Table

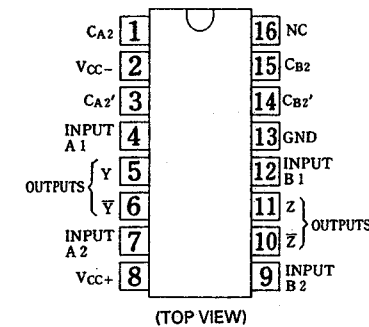
INPUTS				OUTPUTS		FUNCTION
CLR	PR	D	CK	Q	Q-bar	
L	H	X	X	L	H	CLEAR
H	L	X	X	H	L	PRESET
L	L	X	X	H	H	—
H	H	L		L	H	—
H	H	H		H	L	—
H	H	X		Qn	Qn-bar	NO CHANGE

X : Don't care

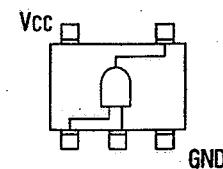
■ TC7S04F [TOSHIBA]
(Inverter)



■ TL441CNS [TEXAS]
(Log Amp)



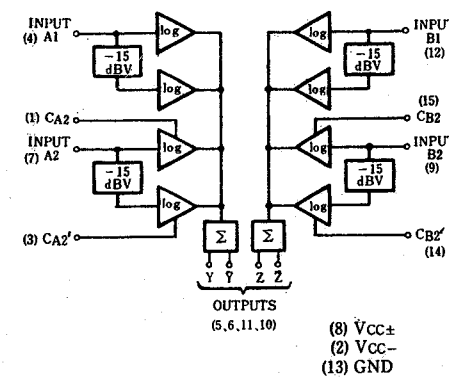
■ TC7S08F [TOSHIBA]
(2 Input Single AND Gate)



TRUE Table

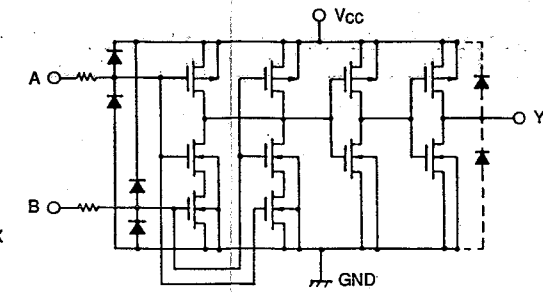
A	B	X
L	L	L
L	H	L
H	L	L
H	H	H

■ TC7SU04F [TOSHIBA]
(Refer to TC7S04F.)

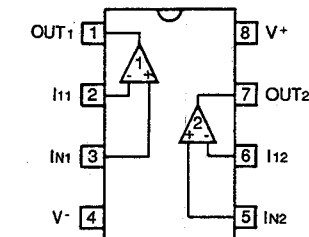


TRUE Table

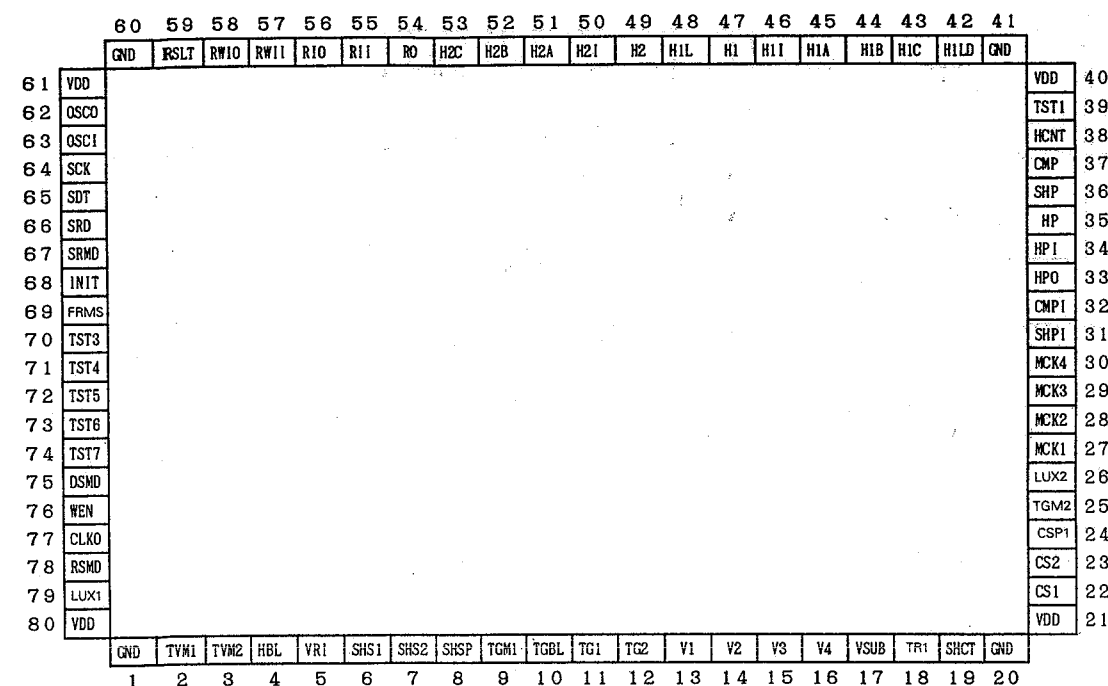
A	B	X
L	L	H
L	H	H
H	L	H
H	H	L



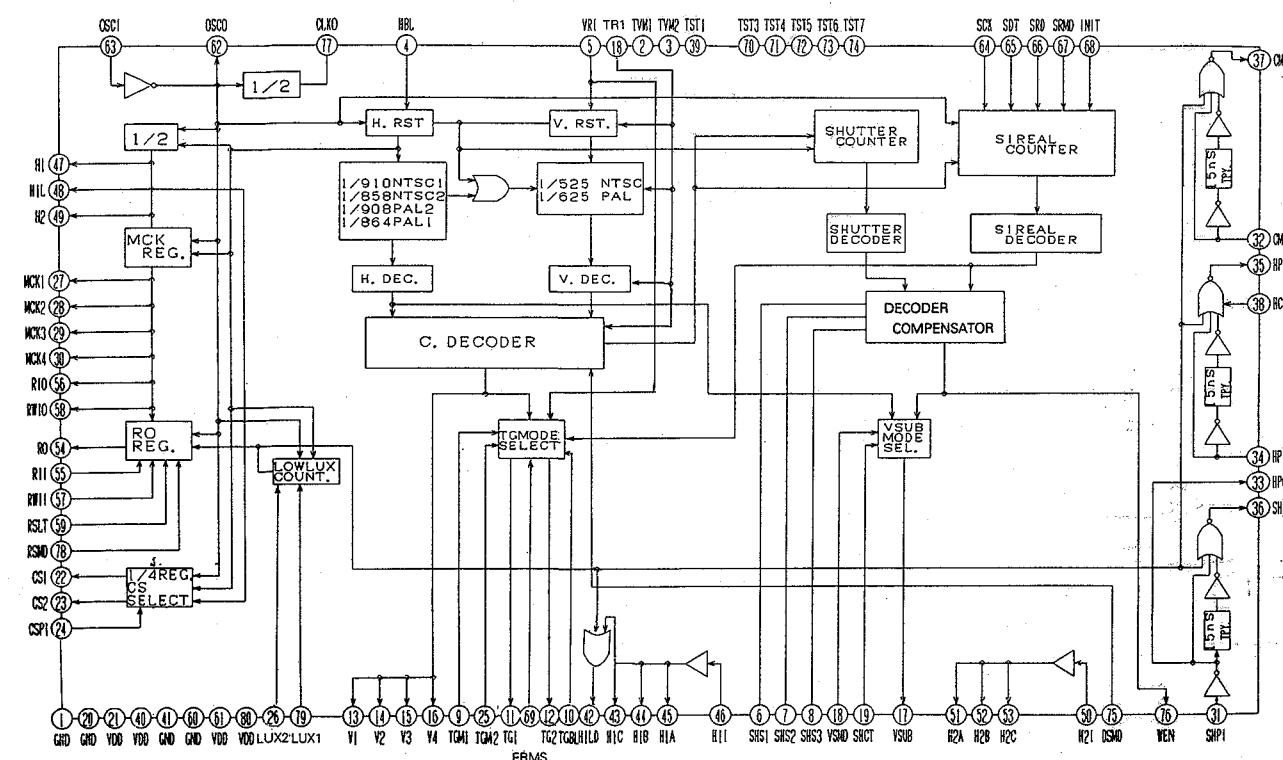
■ UPC812G2 [NEC]
(Op.Amp.)



■ **UPD9438AGK [NEC]**
(Timing Pulse Generator)



(TOP VIEW)


















(BLOCK DIAGRAM)














● **Pin function**















[Explanation of column]





Pin No.		Pin Name
2	OSCO	Oscillation output
		Type of buffer - SU : Schmitt TR : Tri-state
		Input and/or output - I : Input O : Output
		Polarity
		Figure : Output current (mA)
		PU : Pull-up PD : Pull-down

No.	Symbol	Description																												
1	GND	Grounding																												
2	TVM1	TV mode 1																												
	—	I	PD			<table><tr><td></td><td>NTSC 1 1820 FH</td><td>NTSC 2 1716 FH</td><td>PAL 2 1816 FH</td><td>PAL 1 1728 FH</td></tr><tr><td>TVM1</td><td>L</td><td>H</td><td>L</td><td>H</td></tr><tr><td>TVM2</td><td>L</td><td>L</td><td>H</td><td>H</td></tr></table>		NTSC 1 1820 FH	NTSC 2 1716 FH	PAL 2 1816 FH	PAL 1 1728 FH	TVM1	L	H	L	H	TVM2	L	L	H	H									
	NTSC 1 1820 FH	NTSC 2 1716 FH	PAL 2 1816 FH	PAL 1 1728 FH																										
TVM1	L	H	L	H																										
TVM2	L	L	H	H																										
3	TVM2	TV mode 2																												
	—	I	PD																											
4	HBL	H. blanking input (øHBLK)																												
		I	SH	PU		<ul style="list-style-type: none">Horizontal sync signal input terminal to be connected with øHBLK of sync signal generator. The breaking (fall point) is detected.																								
5	VRI	Ext. V. sync input																												
		I	SH	PU		<ul style="list-style-type: none">Vertical sync signal input terminal to be connected with VSYNC of sync signal generator. The breaking (fall point) is detected.																								
6	SHS1	Shutter speed 1																												
	—	I	PD																											
7	SHS2	Shutter speed 2																												
	—	I	PD			<table><tr><td>SHS2</td><td>SHS1</td><td>SHSP = L</td><td>FIELD SHSP = H</td><td>FRAME SHSP = H</td></tr><tr><td>L</td><td>L</td><td>1/60</td><td>1/60</td><td>1/30</td></tr><tr><td>L</td><td>H</td><td>1/100</td><td>1/30</td><td>1/15</td></tr><tr><td>H</td><td>L</td><td>1/2000</td><td>1/7.5</td><td>1/3.75</td></tr><tr><td>H</td><td>H</td><td>1/10000</td><td>1/3.75</td><td>1/1.875</td></tr></table>	SHS2	SHS1	SHSP = L	FIELD SHSP = H	FRAME SHSP = H	L	L	1/60	1/60	1/30	L	H	1/100	1/30	1/15	H	L	1/2000	1/7.5	1/3.75	H	H	1/10000	1/3.75
SHS2	SHS1	SHSP = L	FIELD SHSP = H	FRAME SHSP = H																										
L	L	1/60	1/60	1/30																										
L	H	1/100	1/30	1/15																										
H	L	1/2000	1/7.5	1/3.75																										
H	H	1/10000	1/3.75	1/1.875																										
8	SHSP	Shutter speed setting																												
	—	I	PD			Note: "FRAME" expresses storage time based on TG2 as the reference.																								
9	TGM1	Storage mode																												
	—	I	PD			<ul style="list-style-type: none">Input terminal for storage mode settingL : Field, H : Frame																								
10	TGBL	Transfer gate blanking																												
		I	PD			<ul style="list-style-type: none">Slow shutter speed input for multi-speed shutterBecomes active as blanking pulse at the rise of pulse.																								
11	TG1	Transfer gate pulse 1																												
		O	9			<ul style="list-style-type: none">Transfer gate drive pulse to transfer signal from photodiode to the vertical register (V1).																								
12	TG2	Transfer gate pulse 2																												
		O	9			<ul style="list-style-type: none">Transfer gate drive pulse to transfer signal from photodiode to the vertical register (V3).																								

No.	Symbol	Description																												
13	V1 	V. transfer pulse 1 • Vertical transfer register drive pulse <table border="1"><tr><td>O</td><td>9</td><td></td></tr></table>	O	9																										
O	9																													
14	V2 	V. transfer pulse 2 • Vertical transfer register drive pulse <table border="1"><tr><td>O</td><td>9</td><td></td></tr></table>	O	9																										
O	9																													
15	V3 	V. transfer pulse 3 • Vertical transfer register drive pulse <table border="1"><tr><td>O</td><td>9</td><td></td></tr></table>	O	9																										
O	9																													
16	V4 	V. transfer pulse 4 • Vertical transfer register drive pulse <table border="1"><tr><td>O</td><td>9</td><td></td></tr></table>	O	9																										
O	9																													
17	VSUB —	Board shutter pulse • Board shutter pulse to operate VOD shutter <table border="1"><tr><td>O</td><td>13</td><td></td></tr></table>	O	13																										
O	13																													
18	TRI —	Random shutter function reset method selection L : Sync reset method H : Sync non-reset method <table border="1"><tr><td>I</td><td>PD</td><td></td></tr></table>	I	PD																										
I	PD																													
19	SHCT 	Shutter control • Terminal to control shutter speed of multi-speed shutter. • When this terminal is used, set the serial shutter to 1/10000. • High level stops VSUB (No. 17) output. <table border="1"><tr><td>I</td><td>SH</td><td>PD</td></tr></table>	I	SH	PD																									
I	SH	PD																												
20	GND	Grounding																												
21	VDD	+5 V power supply																												
22	CS1 	Color sampling pulse 1 • Sampling pulse output for color separation sample holding <table border="1"><tr><td>O</td><td>9</td><td></td></tr></table>	O	9																										
O	9																													
23	CS2 	Color sampling pulse 2 <table border="1"><tr><td></td><td>CSP2</td><td>CSP1</td><td>CS1</td><td>CS2</td></tr><tr><td></td><td>L</td><td>L</td><td>MCK1</td><td>MCK1</td></tr><tr><td></td><td>L</td><td>H</td><td>MCK2</td><td>MCK2</td></tr><tr><td></td><td>H</td><td>L</td><td>MCK3</td><td>MCK3</td></tr><tr><td></td><td>H</td><td>H</td><td>MCK4</td><td>MCK4</td></tr></table> <table border="1"><tr><td>O</td><td>9</td><td></td></tr></table>		CSP2	CSP1	CS1	CS2		L	L	MCK1	MCK1		L	H	MCK2	MCK2		H	L	MCK3	MCK3		H	H	MCK4	MCK4	O	9	
	CSP2	CSP1	CS1	CS2																										
	L	L	MCK1	MCK1																										
	L	H	MCK2	MCK2																										
	H	L	MCK3	MCK3																										
	H	H	MCK4	MCK4																										
O	9																													
24	CSP2 —	Color sampling pulse phase setting 2 • Phases of CS1 and CS2 are settable by this pulse together with CSP1. <table border="1"><tr><td>I</td><td>PD</td><td></td></tr></table>	I	PD																										
I	PD																													
25	TGM2 —	Store mode 2 Input terminal for store mode setting. Use this terminal in combination with DSMD (75) and TGM1 (9). (Refer to the last page of this description of pin functions.) <table border="1"><tr><td>I</td><td>PD</td></tr></table>	I	PD																										
I	PD																													
26	LUX2 	Low lux mode 2 Low Lux setting terminal 2. L : Corresponding to CDS, H : Corresponding to RDS Refer to the usage example and low lux mode tables. <table border="1"><tr><td>I</td><td>PU</td><td></td></tr></table>	I	PU																										
I	PU																													
27	MCK1 	Main clock 1 • Main clock fck output terminal. • Output signal having the same phase as H1 (No. 47). <table border="1"><tr><td>O</td><td>9</td><td></td></tr></table>	O	9																										
O	9																													
28	MCK2 	Main clock 2 • Main clock fck output terminal. • Output signal whose phase is 90° delayed from H1 (No. 47). <table border="1"><tr><td>O</td><td>9</td><td></td></tr></table>	O	9																										
O	9																													

No.	Symbol	Description
29	MCK3 	Main clock 3 <ul style="list-style-type: none"> • Main clock fck output terminal. • Output signal whose phase is 180° delayed from H1 (No. 47).
30	MCK4 	Main clock 4 <ul style="list-style-type: none"> • Main clock fck output terminal. • Output signal whose phase is 270° delayed from H1 (No. 47).
31	SHP1 	Sample holding pulse input <ul style="list-style-type: none"> • Input terminal to receive SHP (No. 36) output signal. • Input signal is equivalent to main clock.
32	CMPI 	Clamp pulse input <ul style="list-style-type: none"> • Input terminal to receive SHP (No. 36) output signal. • Input signal is equivalent to main clock.
33	HPO 	Half pitch output <ul style="list-style-type: none"> • Output signal approx. 20 ns behind of SHP (No. 36) output. • To be connected with HP1 (No. 34) through capacitor and resistor.
34	HPI 	Half pitch input <ul style="list-style-type: none"> • Input terminal for fine adjustment of HP (No. 35) output. • To be connected with HPO (No. 33) through capacitor and resistor.
35	HP 	Half pitch output <ul style="list-style-type: none"> • Signal output at the midterm between CMP (No. 37) and SHP (No. 36) outputs.
36	SHP 	Sample holding pulse output <ul style="list-style-type: none"> • To sample video signal.
37	CMP 	Clamp pulse <ul style="list-style-type: none"> • To clamp video signal.
38	HCNT —	Half pitch control <ul style="list-style-type: none"> • To fix HP (No. 35) pulse at High level. L : Normal mode output H : High level fixing output
39	TST1 —	Test pin 1 <ul style="list-style-type: none"> • Should be open in general.
40	VDD	+5 V power supply
41	GND	Grounding
42	H1LD 	H. final gate transfer pulse for 3-CCD <ul style="list-style-type: none"> • Horizontal drive pulse output that has High level in horizontal blanking period
43	H1C 	H. transfer pulse for 3-CCD <ul style="list-style-type: none"> • Horizontal drive pulse output that has High level in horizontal blanking period
44	H1B 	H. transfer pulse for 3-CCD <ul style="list-style-type: none"> • Horizontal drive pulse output that has High level in horizontal blanking period
45	H1A 	H. transfer pulse for 3-CCD <ul style="list-style-type: none"> • Horizontal drive pulse output that has High level in horizontal blanking period

No.	Symbol	Description
46	H1I 	H. transfer pulse input for 3-CCD <ul style="list-style-type: none"> Input terminal to distribute signal to horizontal transfer pulse terminals for 3-CCD. Connect with H1 (No. 47) for use of 3-CCD camera.
47	H1 	H. transfer pulse <ul style="list-style-type: none"> Horizontal drive signal output that has High level in horizontal blanking period. Connect with H1I (No. 46) for use of 3-CCD camera.
48	H1L 	H. final gate transfer pulse <ul style="list-style-type: none"> Horizontal drive signal output that has High level in horizontal blanking period.
49	H2 	H. transfer pulse <ul style="list-style-type: none"> Horizontal drive signal output that has Low level in horizontal blanking period. Connect with H2I (No. 50) for use of 3-CCD camera.
50	H2I 	H. transfer pulse input for 3-CCD <ul style="list-style-type: none"> Input terminal to distribute signal to horizontal transfer pulse terminals for 3-CCD. Connect with H2 (No. 49) for use of 3-CCD camera.
51	H2A 	H. transfer pulse for 3-CCD <ul style="list-style-type: none"> Horizontal drive signal output that has Low level in horizontal blanking period.
52	H2B 	H. transfer pulse for 3-CCD <ul style="list-style-type: none"> Horizontal drive signal output that has Low level in horizontal blanking period.
53	H2C 	H. transfer pulse for 3-CCD <ul style="list-style-type: none"> Horizontal drive signal output that has Low level in horizontal blanking period.
54	RO 	H. output reset <ul style="list-style-type: none"> CCD output reset pulse terminal. This pulse is added with DC component and supplied to ϕR terminal of CCD.
55	R1I 	H. output reset timing input <ul style="list-style-type: none"> Input terminal to adjust output timing of RO (No. 54) with external input. Active when RSLT (No. 59) has High level. To be connected with RIO (No. 56).
56	RIO 	H. output reset timing output <ul style="list-style-type: none"> Output terminal to adjust output timing of RO (No. 54) with external input. To be connected with R1I (No. 55).
57	RW1I 	H. output reset pulse width setting input <ul style="list-style-type: none"> Input terminal to adjust pulse width of RO (No. 54) with external input. Active when RSLT (No. 59) has High level. To be connected with RW1O (No. 58).
58	RW1O 	H. output reset pulse width setting output <ul style="list-style-type: none"> Output terminal to adjust pulse width of RO (No. 54) with external input. To be connected with RW1I (No. 57).
59	RSLT —	H. output reset switching <ul style="list-style-type: none"> Input terminal to switch setting mode of RO (No. 54) output. L : Internal setting H : External setting
60	GND	Grounding
61	VDD	+5 V power supply
62	OSCO 	Oscillator output <ul style="list-style-type: none"> Output terminal of built-in oscillation circuit

No.	Symbol	Description
63	OSC I 	Oscillator input • Input terminal of built-in oscillator circuit <div>I</div>
64	SCK 	Serial clock • Clock input terminal for serial interface. • Reads in at the pulse rise and inputs 1/4 frequency of original oscillation or lower. <div>I</div>
65	SDT —	Serial data • Data input terminal for serial interface. Input data is positive logic. • Sequential reading to start with LSB. <div>I</div>
66	SRD —	Reception enable signal • Enable signal output terminal for serial interface to inform microprocessor whether it is enabled for data reception or disabled. L : Enabled for data reception H : Disabled for data reception <div>O 9</div>
67	SRMD —	Reception mode switching • L : Reception is possible only in V. blanking period. When reception does not finish in V. blanking period : Ineffective • H : Reception is always possible. <div>I PD</div>
68	INIT —	Serial reset • L : Disables serial interface from operation, or resets it forcibly (hard resetting). • H : Enables serial interface for original operation. <div>I</div>
69	FRMS —	Frame select 1-pixel or 2-pixel read-out field is selectable at a unit of frame. L : 1st and 2nd fields read-out H : 3rd and 4th fields read-out <div>I PD</div>
70	TST3 —	Test pin 3 • Should be open in general. <div>I PD</div>
71	TST4 —	Test pin 4 • Should be open in general. <div>I PD</div>
72	TST5 —	Test pin 5 • Should be open in general. <div>I PD</div>
73	TST6 —	Test pin 6 • Should be open in general. <div>I PD</div>
74	TST7 —	Test pin 7 • Should be open in general. <div>I PD</div>
75	DSMD —	Device mode • V. transfer pulse switching terminal for 1/3-CCD or 2/3-CCD. L : Conforming to 1/3-CCD H : Conforming to 2/3-CCD <div>I PD</div>
76	WEN 	Write enable • Timing pulse output to write data in external memory at slow shutter speed. <div>O 13</div>
77	CLKO 	Clock output • Half divided output of oscillation frequency <div>O 13</div>
78	RSMD —	Switching of H. output reset pulse polarity • To switch output polarity of RO (No. 54). L : Positive H : Negative <div>O PD</div>
79	LUX 1 —	Low lux mode • Low lux setting terminal L : Normal mode H : Low lux mode Refer to the low lux mode table. <div>I PD</div>
80	VDD	+5 V power supply

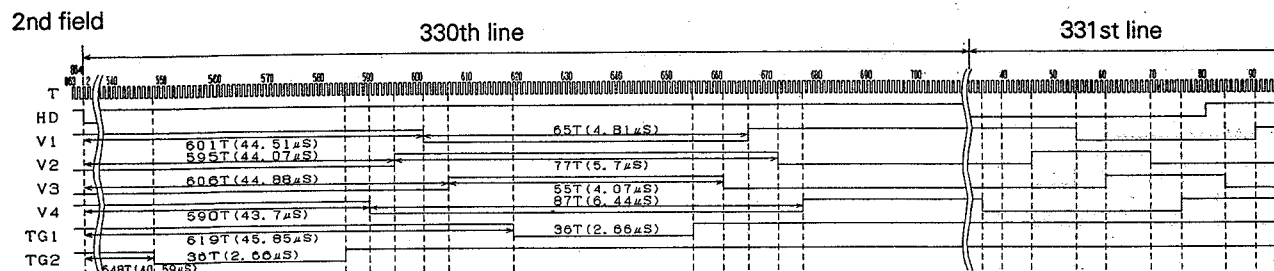
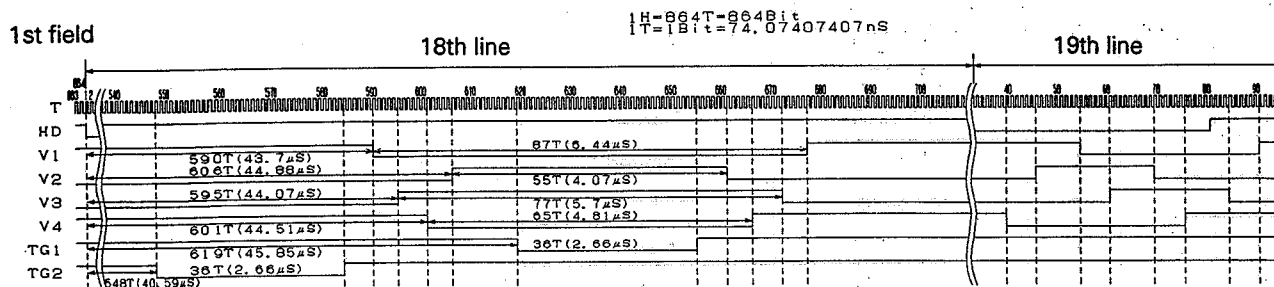
● **Corresponding CCDs and Read-out methods**

DSMD	TGM2	TGM1	Corresponding CCD	Read-out method
L	L	L	1/3" CCD	Field
L	L	H	1/3" CCD	Frame
L	H	L	Inhibited	Inhibited
L	H	H	Inhibited	Inhibited
H	L	L	2/3" CCD	Field
H	L	H	2/3" CCD	Frame
H	H	L	2/3" CCD	2-pixel
H	H	H	2/3" CCD	1-pixel

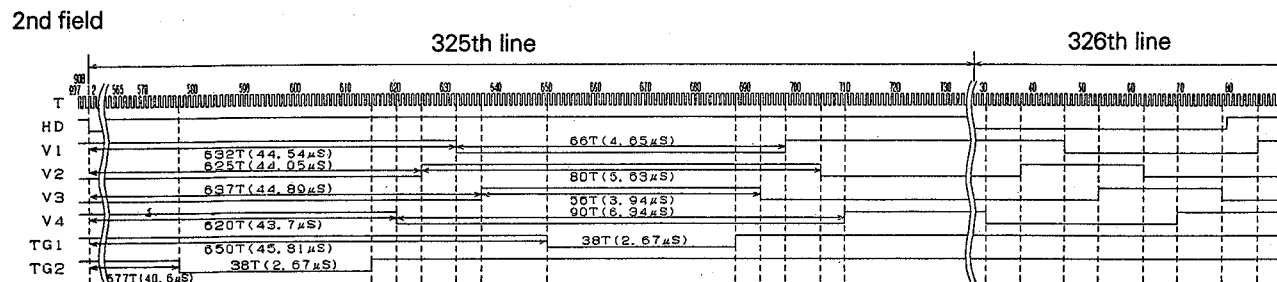
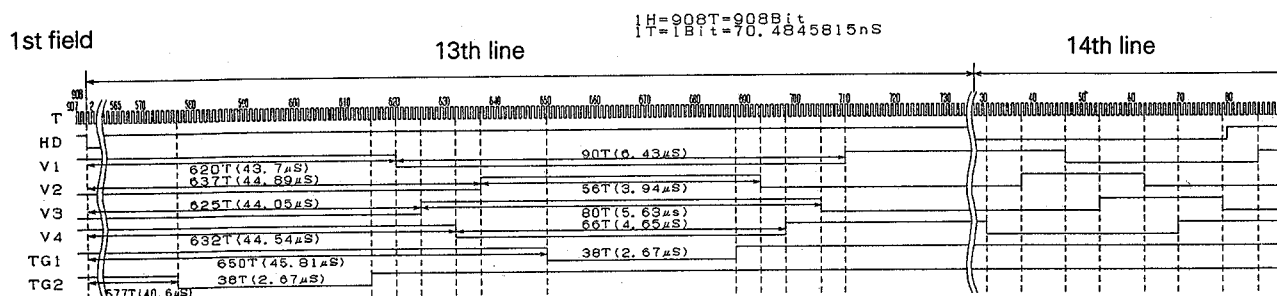
● **Low lux mode**

LUX2	LUX1	Mode
L	L	Normal
L	H	CDS
H	L	Normal
H	H	RDS

[PAL 1] 1/3" CCD H-TIMING

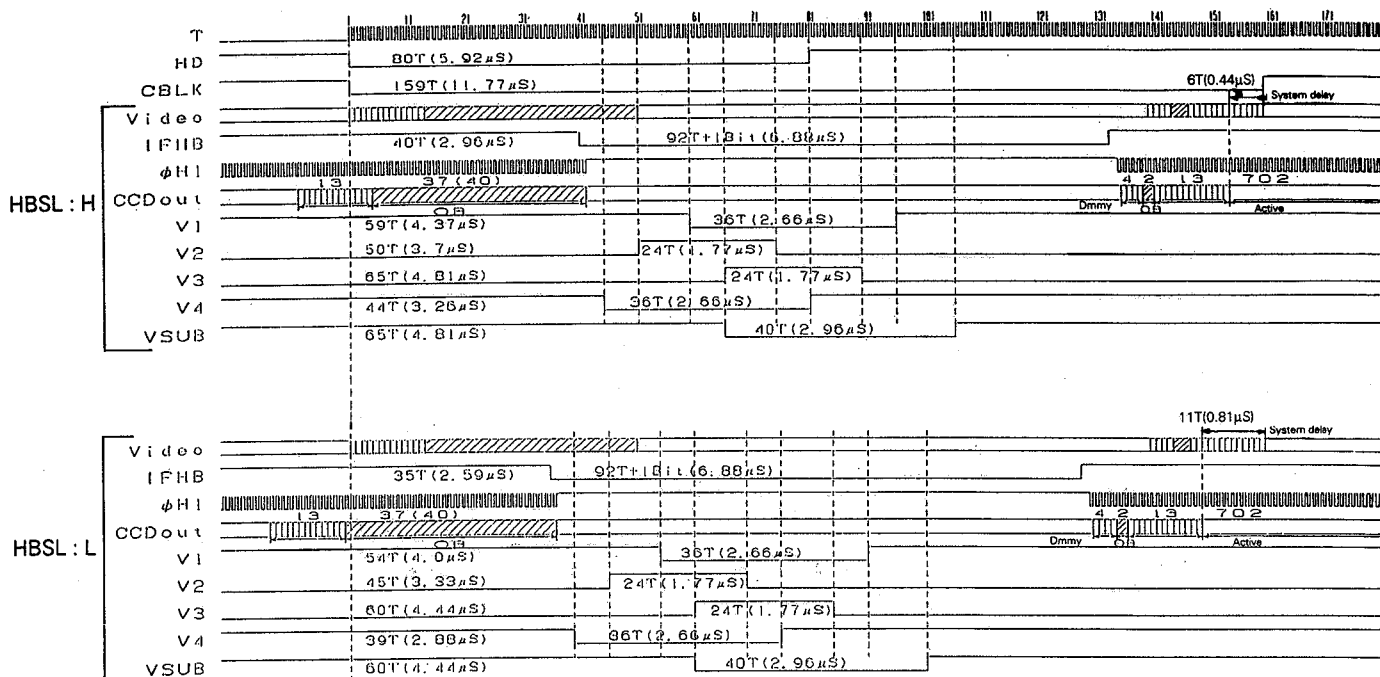


[PAL 2] 1/3" CCD H-TIMING



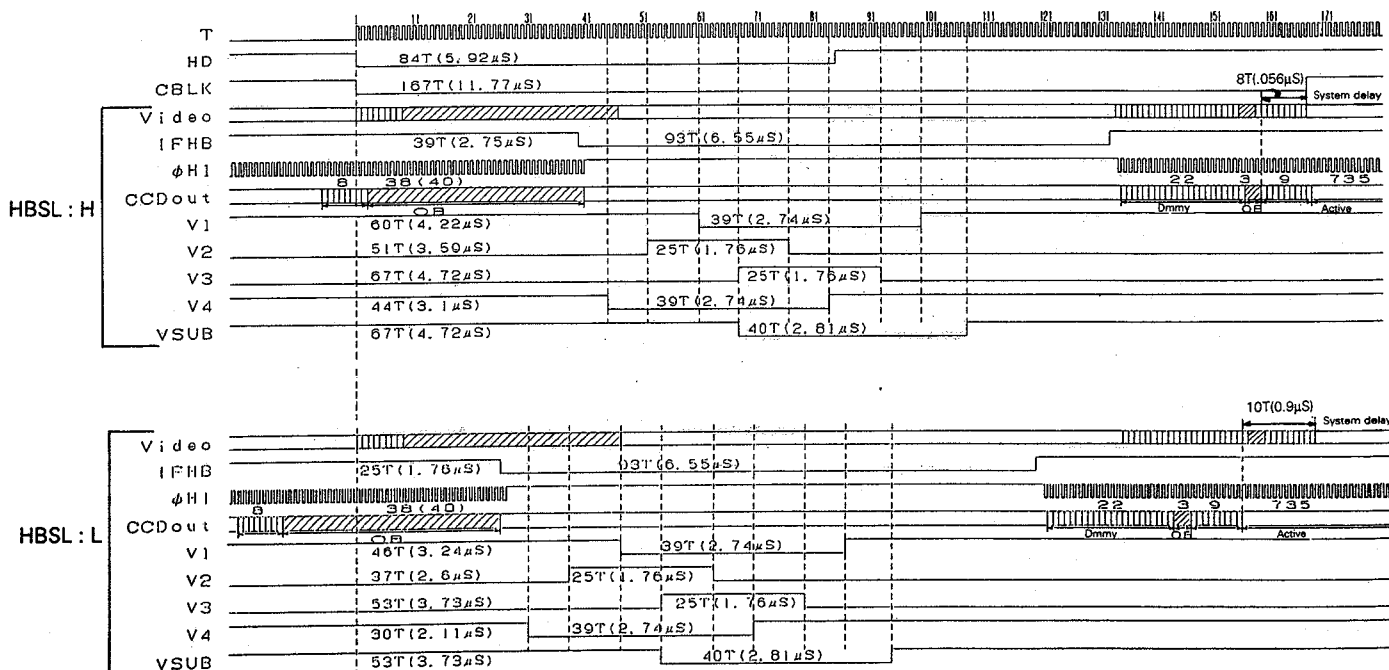
[PAL 1] 1/3" CCD H-TIMING

1H=864T=864Bit
1T=1Bit=74.07407407ns

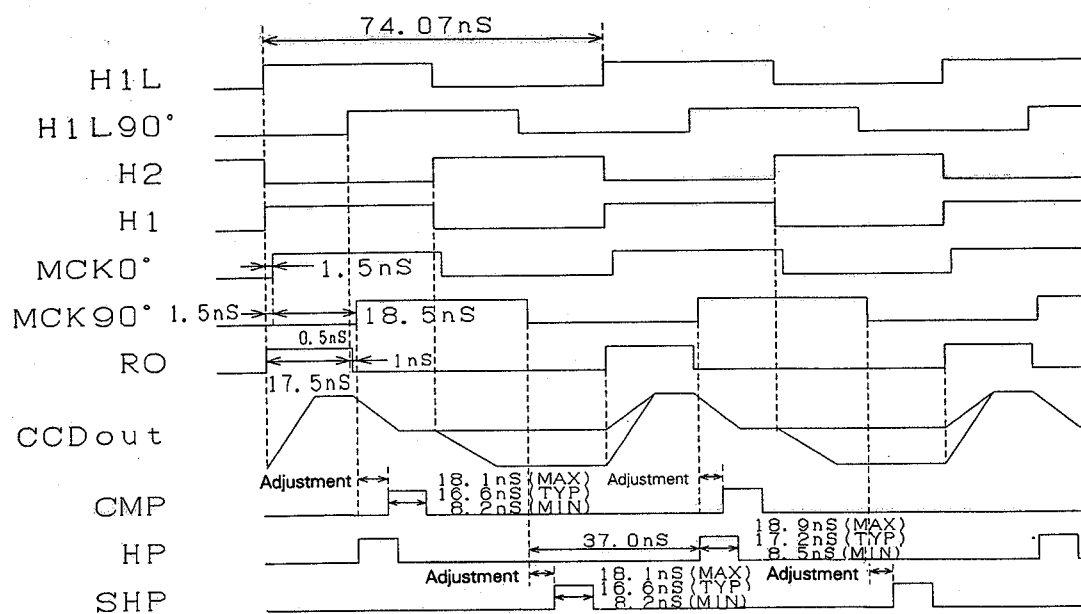


[PAL 2] 1/3" CCD H-TIMING

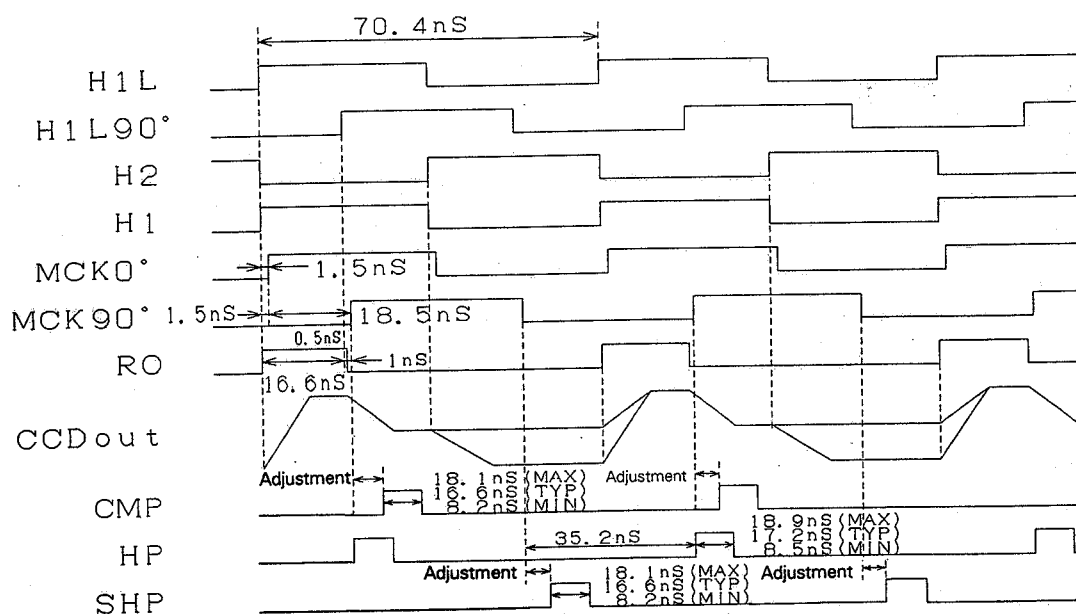
1H=908T=908Bit
1T=1Bit=70.4845815ns



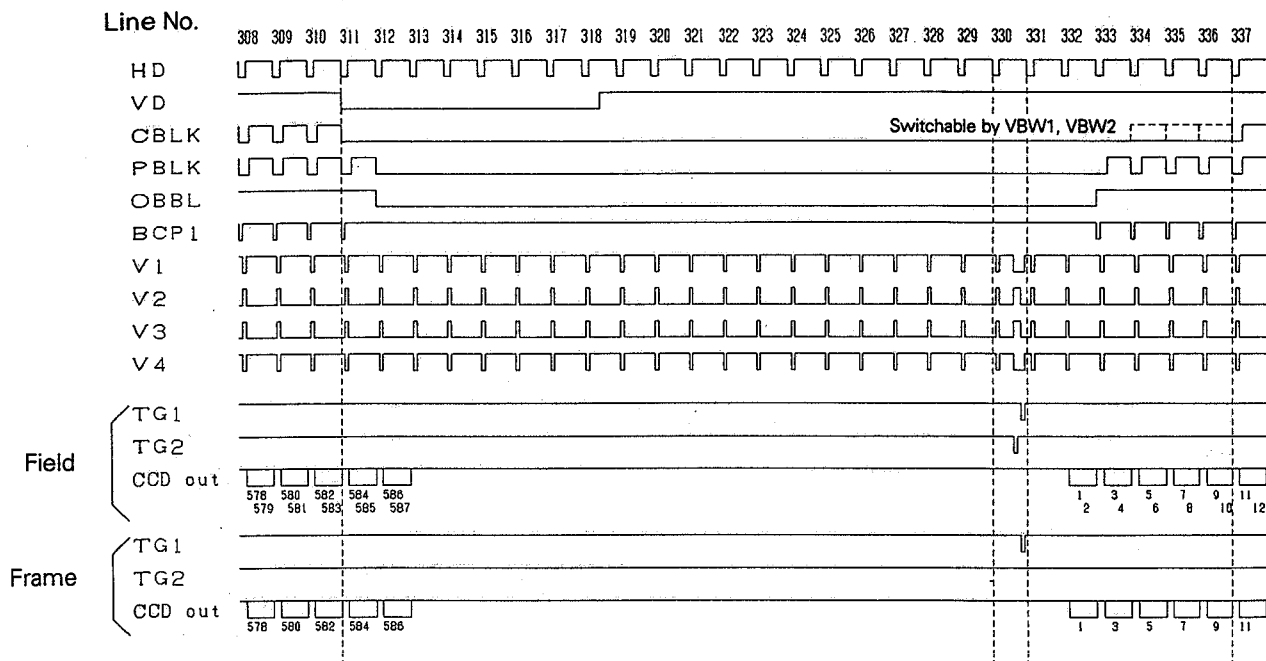
[PAL 1] 1/3" CCD DRIVING PULSE H-TIMING



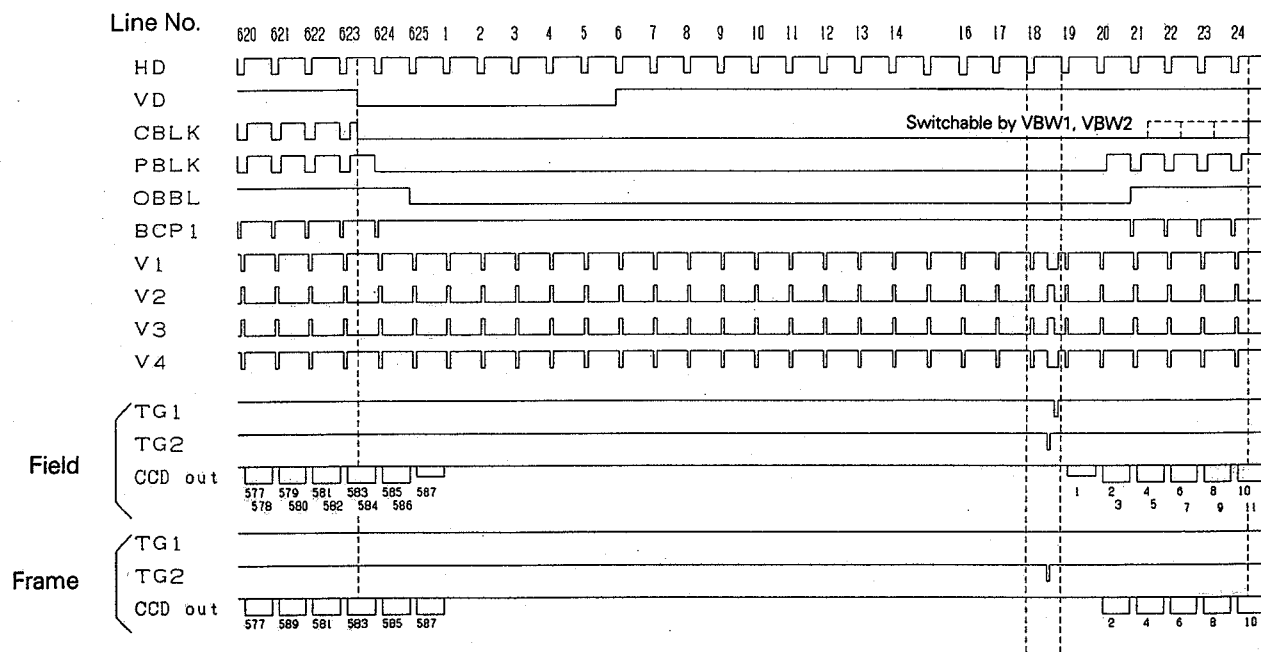
[PAL 2] 1/3" CCD DRIVING PULSE H-TIMING



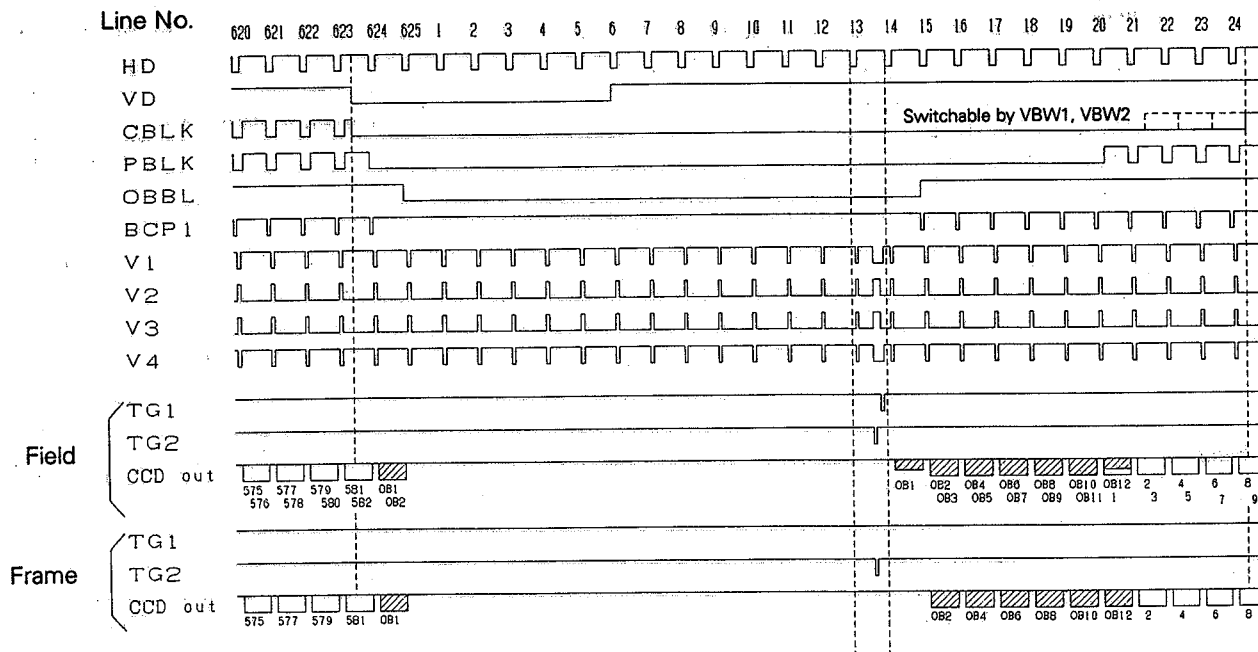
[PAL 1] 1/3" CCD V-TIMING (2nd field)



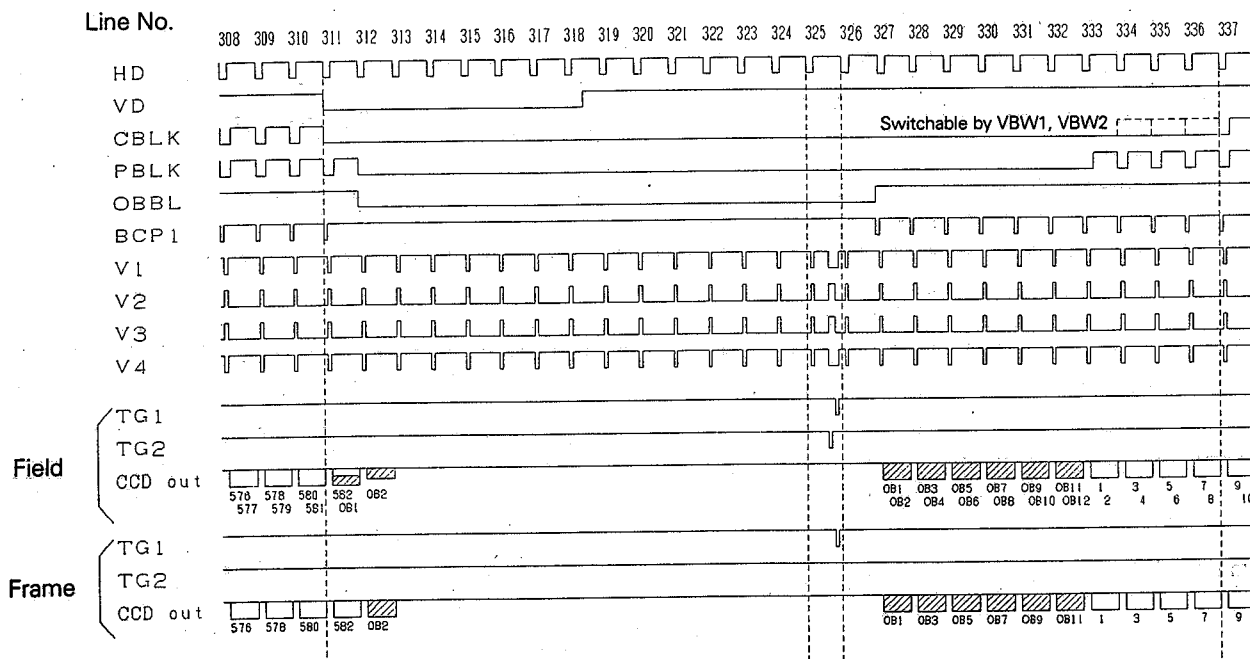
[PAL 1] 1/3" CCD V-TIMING (1st field)



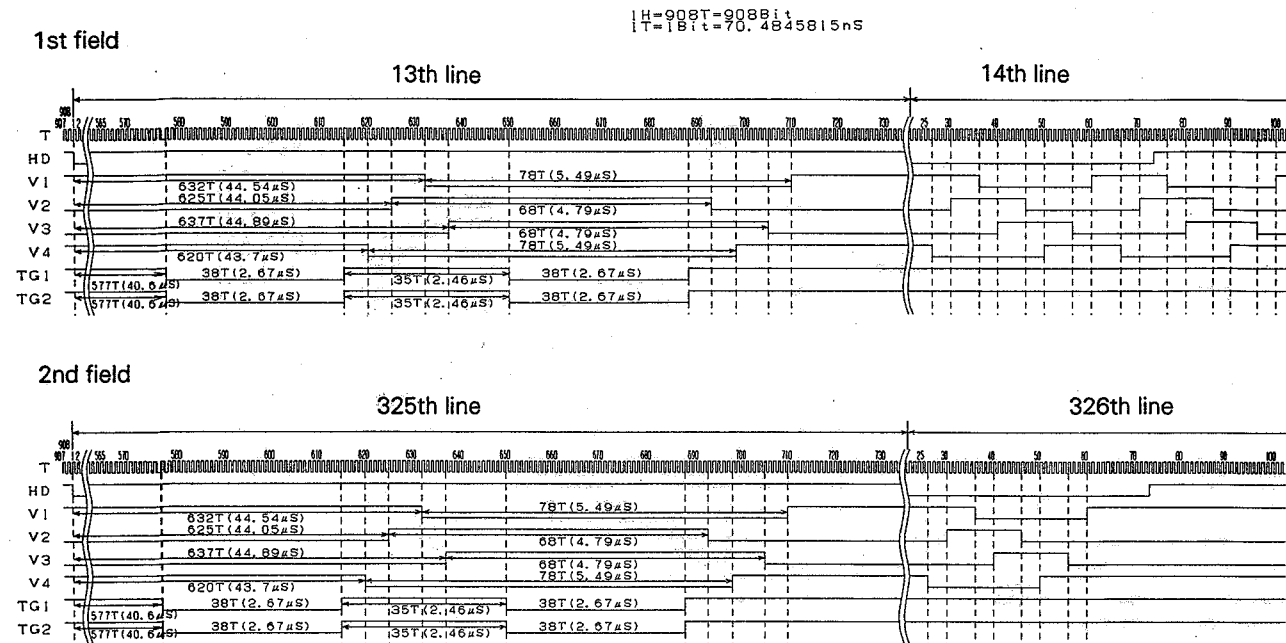
[PAL 2] 1/3" CCD V-TIMING (1st field)



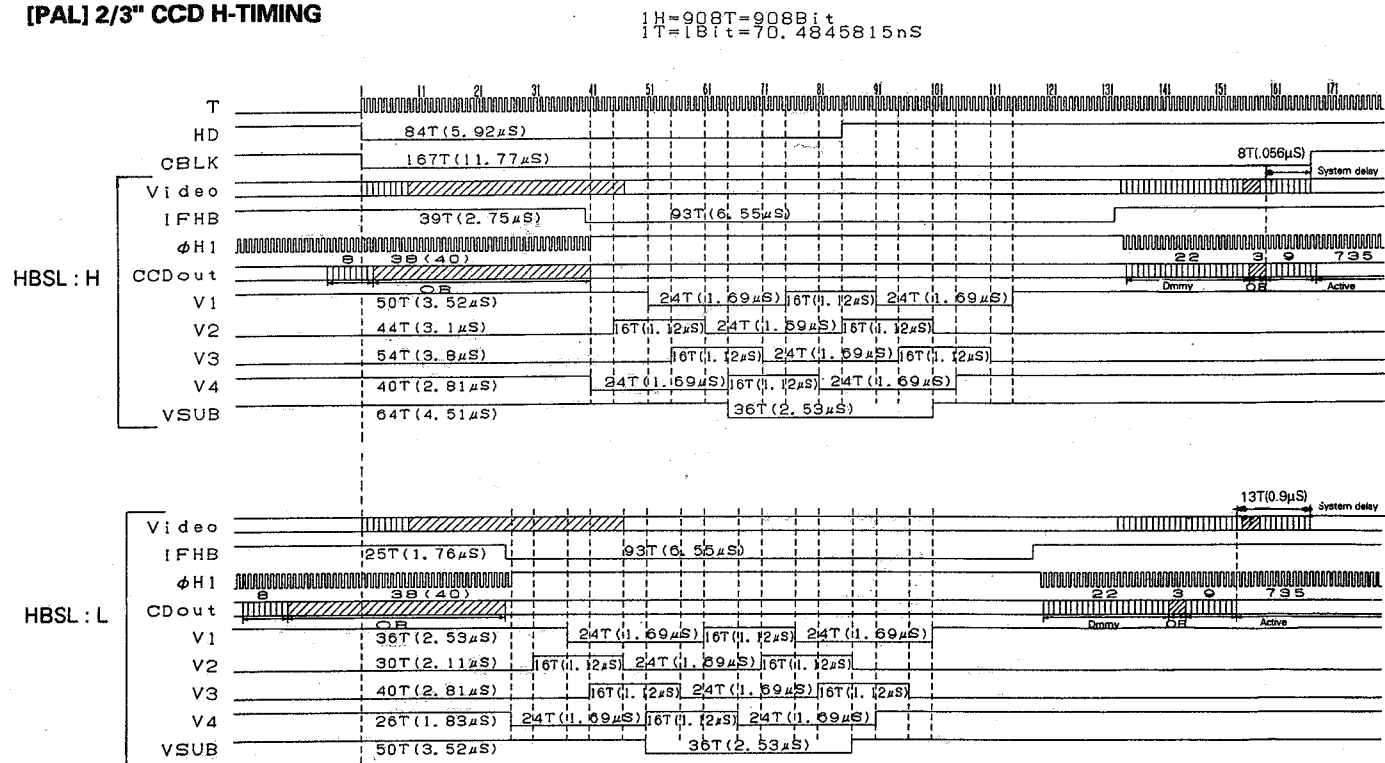
[PAL 2] 1/3" CCD V-TIMING (2nd field)



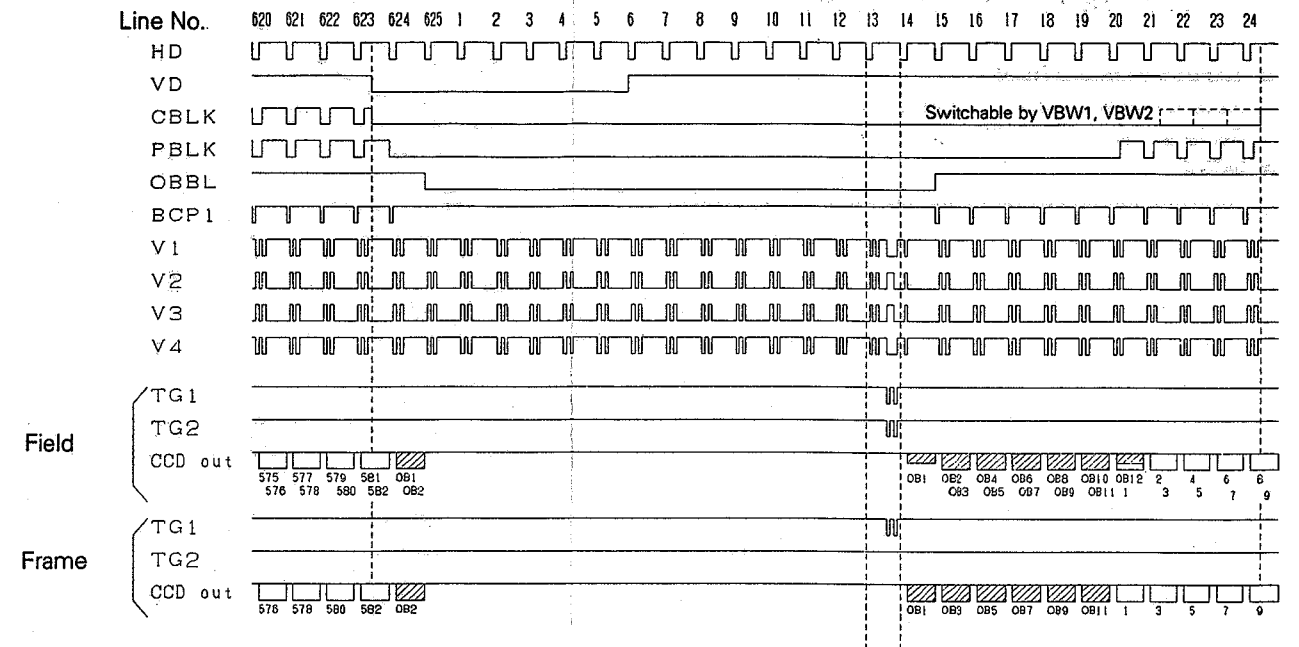
[PAL] 2/3" CCD H-TIMING



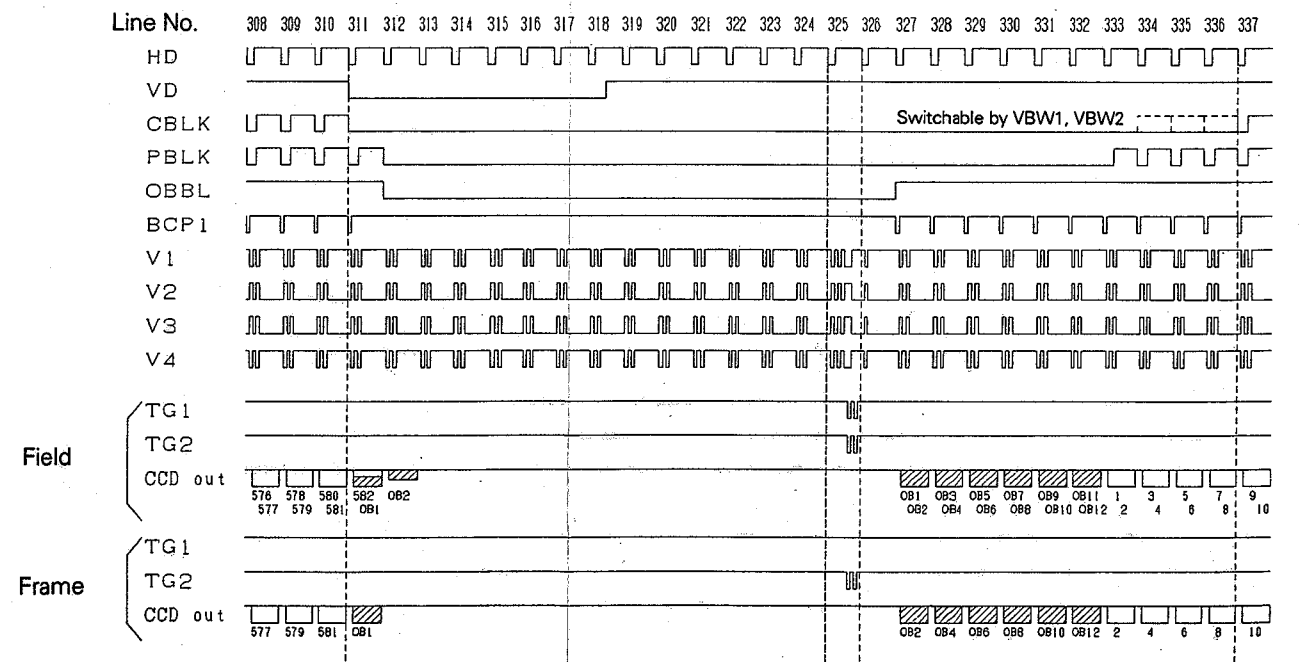
[PAL] 2/3" CCD H-TIMING



[PAL] 2/3" CCD V-TIMING (1st field)



[PAL] 2/3" CCD V-TIMING (2nd field)



SECTION 4 EXPLODED VIEW AND PARTS LIST

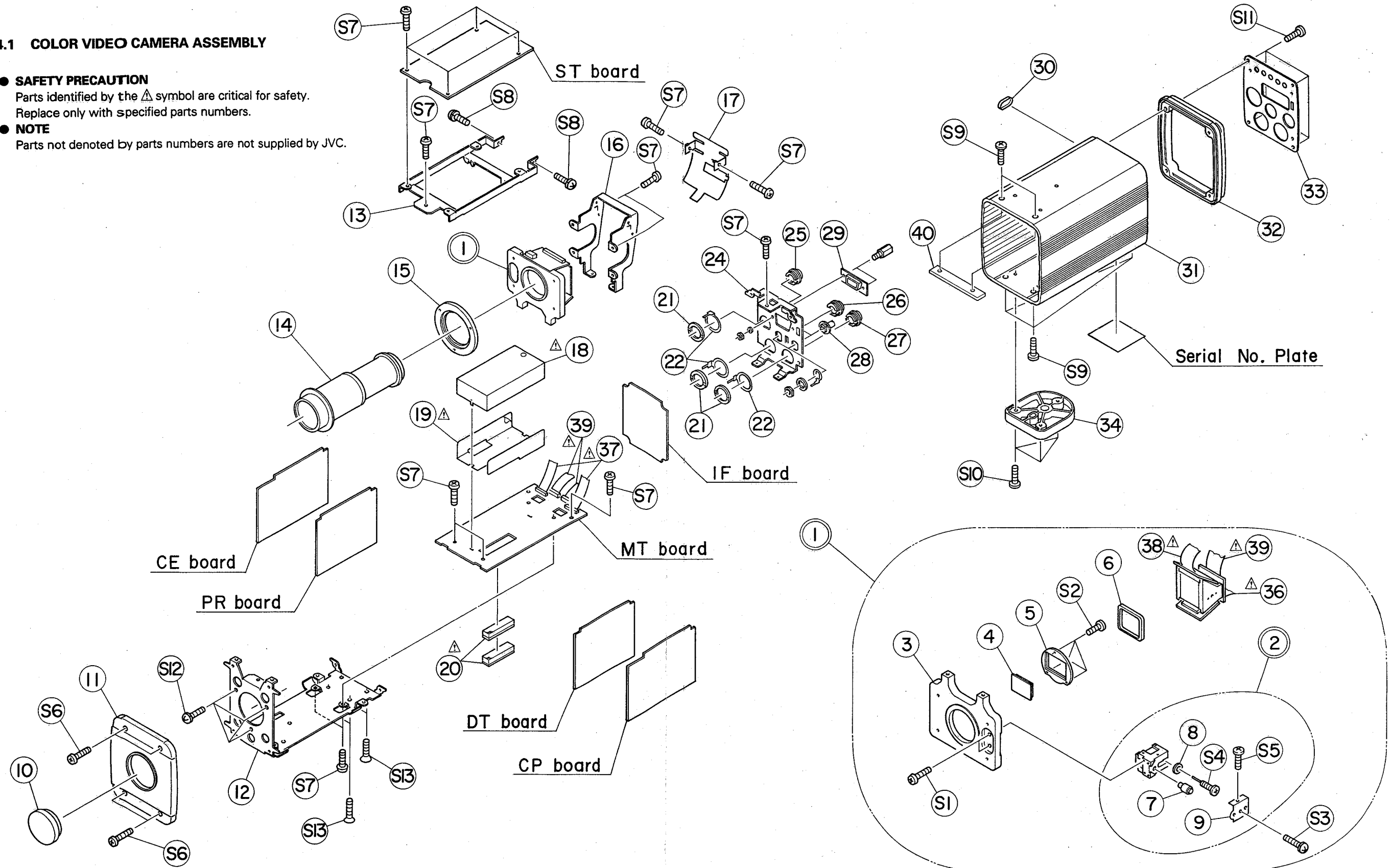
4.1 COLOR VIDEO CAMERA ASSEMBLY

● SAFETY PRECAUTION

Parts identified by the Δ symbol are critical for safety.
Replace only with specified parts numbers.

● NOTE

Parts not denoted by parts numbers are not supplied by JVC.



● KY-F50 ASSEMBLY LIST **M1**

M1M1 ☐ ☐ ☐ ☐ ☐ ☐

Symbol No.	Part No.	Part Name	Description
1	SCM0913-POA	OPTICAL BLOCK ASSEMBLY	
2	SCM0808-00B	OPTICAL GUIDE A	
3	SC31983-001	OP BASE	
4	SC45530-011	FILTER	
5	SC31784-001	HOLDER	
6	SC45529-001	PRISM RUBBER	
7	SC45485-002	PIN	
8	WLS2600N	WASHER	
9	SC45488-001	PLATE	
10	CM45867-001	DUST COVER	
11	SC20622-001	FRONT FRAME	
12	SC20623-002	BOTTOM FRAME	
13	SC31985-001	ST BRACKET	
14	SC20631-00B	LENS ASS'Y	
15	SC45881-002	PIPE BRACKET	
16	SC31987-001	OP BRACKET	
17	SC32035-001	SHIELD PLATE	
△ 18	SCV2672-002	AC-DC CONVERTER	
△ 19	SC45932-002	SHEET	
△ 20	SC45834-002	SHEET	
21	SC45586-001	NUT	
22	SC45831-001	LUG	
24	SC31984-002	REAR PLATE	
25	SCV2375-S05	CONNECTOR	TRIGGER
26	SCV2375-S06	CONNECTOR	REMOTE
27	QMDB108-001	CONNECTOR	DC IN
28	CEMB006-00A	BNC CONNECTOR	VIDEO OUT/GENLOCK IN
29	SCV2373-A09	CONNECTOR	RGB. Y/C. COMP OUT
30	SC45568-001	CAP	
31	SC20615-032	COVER	
32	SC20614-002	REAR FRAME	
33	SC31962-011	REAR PANEL	
34	SC31968-001	TRIPOD BASE	
△ 36	SSV2605-2005	FFC CABLE	ISR board - ST board
△ 37	SSV2605-2409	FFC CABLE	MT board - ST board
△ 38	SSV2605-2013	FFC CABLE	ISB board - ST board
△ 39	SSV2605-2008	FFC CABLE	ISG board - ST board, MT board - IF board
40	SC45976-001	PLATE	
S1	SDSP2606M	SCREW	M2.6×6
S2	SPSK2030M	SCREW	M2×3.0
S3	LPSP2610Z	SCREW	M2.6×10
S4	SC45486-002	SCREW	
S5	SPSK2040M	SCREW	M2×4.0
S6	SDSP2606N	SCREW	M2.6×6
S7	SDSP2604R	SCREW	M2.6×4
S8	LPSP2606Z	SCREW	M2.6×6
S9	SPSP2604N	SCREW	M2.6×4
S10	SPSP2604N	SCREW	M2.6×4
S11	SPSP2614N	SCREW	M2.6×14
S12	LPSP2608Z	SCREW	M2.6×8
S13	SSSK2604M	SCREW	M2.6×4

SECTION 5

ELECTRICAL PARTS LIST

SAFETY PRECAUTION:

Parts identified by the \triangle symbol are critical for safety. Replace only with specified parts numbers.
For maximum reliability and performance, all other replacement parts should be identical to those specified.

NOTE:

- Parts not denoted by parts numbers are not supplied by JVC.
- Abbreviations in this list are as follows:

RESISTORS

In the "Description" column:

- All resistance values are in ohms (Ω).
- K expresses kilo-ohm (1 000 ohms, k Ω).
- M expresses mega-ohm (10^6 ohms, M Ω).

In the "Parts Name" column:

- COMP. RESISTOR : Composition Resistor
- U.F. RESISTOR : Non-inflammable Resistor
- O.M.F. RESISTOR : Oxide Metalized Film Resistor
- FUSI. RESISTOR : Fusible Resistor
- M.P. RESISTOR : Metal Plate Resistor
- M.G. RESISTOR : Metal Graze Resistor
- M.F. RESISTOR : Metal Film Resistor
- W.W. RESISTOR : Wire Wound Resistor

CAPACITORS

In the "Description" column:

- All capacitance values are in microfarad (μ F) unless otherwise indicated.
- P expresses picofarad (10^{-12} farad, pF).

In the "Parts Name" column:

- TRIM. CAPACITOR : Trimmer Capacitor
- CER. CAPACITOR : Ceramic Capacitor
- E. CAPACITOR : Electrolytic Capacitor
- TAN. CAPACITOR : Tantalum Capacitor
- MPP CAPACITOR : Metalized Polypropylene Capacitor
- O.F. CAPACITOR : Oil Film Capacitor
- MPF CAPACITOR : Metalized Polyfilm Capacitor
- F.M. CAPACITOR : Film Mica Capacitor
- P.P. CAPACITOR : Polypropylene Capacitor
- P.S. CAPACITOR : Polystyrene Capacitor

5.1 ST BOARD ASSEMBLY LIST 01

SCK2447-01-POA

0100000000

Symbol No.	Part No.	Part Name	Description
IC1	UPD9438AGK	I.C.(M)	NEC
IC2	NJM78L15UA	I.C.(M)	JRC
IC3	MN3112SA	I.C.(M)	MATSUSHITA
IC4	MN3112SA	I.C.(M)	MATSUSHITA
IC5	MN3112SA	I.C.(M)	MATSUSHITA
IC6	NJM062M	I.C.(M)	JRC
IC7	NJM062M	I.C.(M)	JRC
IC101	JCS0027	I.C.(M)	JVC
IC102	TC7SU04F	I.C.(M)	TOSHIBA
IC103	TC7SU04F	I.C.(M)	TOSHIBA
IC104	TC7SU04F	I.C.(M)	TOSHIBA
IC105	TC4W53F	I.C.(M)	TOSHIBA
IC106	TC74HC4050AFS	I.C.(M)	TOSHIBA
IC107	TC74HC4049AFS	I.C.(M)	TOSHIBA
IC108	NJM062M	I.C.(M)	JRC
IC109	TC7S86F	I.C.(M)	TOSHIBA
IC111	LM1881M	I.C.(M)	NATIONAL SEMICO
IC112	TC4W53F	I.C.(M)	TOSHIBA
IC113	AD8011AR	I.C.(M)	ANALOG DEVICES
IC114	AD817AR	I.C.(M)	ANALOG DEVICES
IC115	TC74HC4538AFS	I.C.(M)	TOSHIBA
IC116	UPC812G2	I.C.(M)	NEC
IC119	NJM5532M	I.C.(M)	JRC
IC120	NJM5532M	I.C.(M)	JRC
IC121	TC74HC4050AFS	I.C.(M)	TOSHIBA
IC122	P16V8H-15J	I.C.(M)	TOSHIBA
IC251	TC74VHC74FS	I.C.(M)	SONY
IC252	CXL5504M	I.C.(M)	SONY
IC253	CXL5504M	I.C.(M)	SONY
IC254	CXL5504M	I.C.(M)	SONY
IC351	MB88341PV	I.C.(M)	FUJITSU
IC352	MC14094BF	I.C.(M)	MOTOROLA
Q2	2SD1820(QR)	TRANSISTOR	MATSUSHITA
Q5	2SB1219(QR)	TRANSISTOR	MATSUSHITA
Q8	2SD1820(QR)	TRANSISTOR	MATSUSHITA
Q9	2SA1462Y3Y4	TRANSISTOR	NEC
Q10	2SC3735(45)	TRANSISTOR	NEC
Q101	2SD1820(QR)	TRANSISTOR	MATSUSHITA
Q102	DTA124EU	TRANSISTOR	ROHM
Q111	2SC4626(BC)	TRANSISTOR	MATSUSHITA
Q112	2SA1790(BC)	TRANSISTOR	MATSUSHITA
Q254	2SA1790(BC)	TRANSISTOR	MATSUSHITA
Q255	3SK157	F.E.T.	NEC
Q257	2SA1790(BC)	TRANSISTOR	MATSUSHITA
Q258	3SK157	F.E.T.	NEC
Q259	2SC4626(BC)	TRANSISTOR	MATSUSHITA
Q260	2SA1748(QR)	TRANSISTOR	MATSUSHITA
Q261	2SC4626(BC)	TRANSISTOR	MATSUSHITA
D1	MA142A	DIODE	MATSUSHITA
D3	MA142A	DIODE	MATSUSHITA
D4	MA142A	DIODE	MATSUSHITA
D5	MA142A	DIODE	MATSUSHITA
D6	MA143A	DIODE	MATSUSHITA
D7	HZM18NB2	ZENER DIODE	HITACHI
D12	MA142A	DIODE	MATSUSHITA
D13	MA142A	DIODE	MATSUSHITA
D14	MA142A	DIODE	MATSUSHITA

Symbol No.	Part No.	Part Name	Description
D15	MA142A	DIODE	MATSUSHITA
D16	MA742	DIODE	MATSUSHITA
D17	MA742	DIODE	MATSUSHITA
D98	MA143A	DIODE	MATSUSHITA
D99	MA143A	DIODE	MATSUSHITA
D101	MA335	DIODE	MATSUSHITA
D102	MA335	DIODE	MATSUSHITA
D103	MA335	DIODE	MATSUSHITA
D104	MA335	DIODE	MATSUSHITA
D106	SVC341L	VARI CAP DIODE	SANYO
D200	MA142A	DIODE	MATSUSHITA
R1	NRSA63J-0R0	M.G.RESISTOR	0 1/16W
R2	NRVA63D-470	M.F.RESISTOR	47 1/16W
R3	NRVA63D-470	M.F.RESISTOR	47 1/16W
R4	NRVA63D-470	M.F.RESISTOR	47 1/16W
R5	NRSA63J-4R7	M.G.RESISTOR	4.7 1/16W
R6	NRVA63D-100	M.F.RESISTOR	10 1/16W
R7	NRVA63D-100	M.F.RESISTOR	10 1/16W
R8	NRVA63D-100	M.F.RESISTOR	10 1/16W
R9	NRSA63J-0R0	M.G.RESISTOR	0 1/16W
R10	NRSA63J-0R0	M.G.RESISTOR	0 1/16W
R11	NRVA63D-100	M.F.RESISTOR	10 1/16W
R12	NRVA63D-100	M.F.RESISTOR	10 1/16W
R13	NRVA63D-100	M.F.RESISTOR	10 1/16W
R14	NRSA63J-0R0	M.G.RESISTOR	0 1/16W
R15	NRVA63D-104	M.F.RESISTOR	100K 1/16W
R16	NRSA63J-0R0	M.G.RESISTOR	0 1/16W
R17	NRVA63D-272	M.F.RESISTOR	2.7K 1/16W
R18	NRSA63J-0R0	M.G.RESISTOR	0 1/16W
R19	NRVA63D-104	M.F.RESISTOR	100K 1/16W
R21	NRSA63J-0R0	M.G.RESISTOR	0 1/16W
R22	NRVA63D-103	M.F.RESISTOR	10K 1/16W
R23	NRVA63D-270	M.F.RESISTOR	27 1/16W
R24	NRVA63D-270	M.F.RESISTOR	27 1/16W
R25	NRVA63D-273	M.F.RESISTOR	27K 1/16W
R26	NRVA63D-183	M.F.RESISTOR	18K 1/16W
R27	NRVA63D-103	M.F.RESISTOR	10K 1/16W
R28	NRVA63D-393	M.F.RESISTOR	39K 1/16W
R29	NRVA63D-183	M.F.RESISTOR	18K 1/16W
R30	NRVA63D-104	M.F.RESISTOR	100K 1/16W
R31	NRVA63D-101	M.F.RESISTOR	100 1/16W
R32	NRVA63D-681	M.F.RESISTOR	680 1/16W
R33	NRVA63D-103	M.F.RESISTOR	10K 1/16W
R34	NRVA63D-123	M.F.RESISTOR	12K 1/16W
R35	NRVA63D-103	M.F.RESISTOR	10K 1/16W
R36	NRVA63D-104	M.F.RESISTOR	100K 1/16W
R37	NRVA63D-104	M.F.RESISTOR	100K 1/16W
R38	NRVA63D-103	M.F.RESISTOR	10K 1/16W
R39	NRVA63D-102	M.F.RESISTOR	1.0K 1/16W
R40	NRVA63D-103	M.F.RESISTOR	10K 1/16W
R41	NRSA63J-105	M.G.RESISTOR	1.0M 1/16W
R43	NRVA63D-104	M.F.RESISTOR	100K 1/16W
R47	NRVA63D-104	M.F.RESISTOR	100K 1/16W
R51	NRSA63J-105	M.G.RESISTOR	1.0M 1/16W
R53	NRVA63D-104	M.F.RESISTOR	100K 1/16W
R61	NRSA63J-105	M.G.RESISTOR	1.0M 1/16W
R63	NRVA63D-104	M.F.RESISTOR	100K 1/16W
R64	NRVA63D-333	M.F.RESISTOR	33K 1/16W

[ST]

Symbol No.	Part No.	Part Name	Description	
R65	NRVA63D-183	M.F.RESISTOR	18K	1/16W
R71	NRSA63J-OR0	M.G.RESISTOR	0	1/16W
R103	NRSA63J-OR0	M.G.RESISTOR	0	1/16W
R105	NRVA63D-102	M.F.RESISTOR	1.0K	1/16W
R106	NRVA63D-102	M.F.RESISTOR	1.0K	1/16W
R107	NRVA63D-102	M.F.RESISTOR	1.0K	1/16W
R108	NRVA63D-272	M.F.RESISTOR	2.7K	1/16W
R109	NRVA63D-272	M.F.RESISTOR	2.7K	1/16W
R111	NRVA63D-221	M.F.RESISTOR	220	1/16W
R112	NRVA63D-102	M.F.RESISTOR	1.0K	1/16W
R113	NRVA63D-104	M.F.RESISTOR	100K	1/16W
R114	NRVA63D-104	M.F.RESISTOR	100K	1/16W
R115	NRVA63D-104	M.F.RESISTOR	100K	1/16W
R116	NRSA63J-105	M.G.RESISTOR	1.0M	1/16W
R117	NRVA63D-271	M.F.RESISTOR	270	1/16W
R118	NRSA63J-OR0	M.G.RESISTOR	0	1/16W
R121	NRVA63D-223	M.F.RESISTOR	22K	1/16W
R122	NRVA63D-223	M.F.RESISTOR	22K	1/16W
R123	NRSA63J-OR0	M.G.RESISTOR	0	1/16W
R124	NRVA63D-333	M.F.RESISTOR	33K	1/16W
R125	NRVA63D-104	M.F.RESISTOR	100K	1/16W
R126	NRVA63D-104	M.F.RESISTOR	100K	1/16W
R127	NRVA63D-104	M.F.RESISTOR	100K	1/16W
R128	NRSA63J-105	M.G.RESISTOR	1.0M	1/16W
R129	NRVA63D-221	M.F.RESISTOR	220	1/16W
R141	NRVA63D-333	M.F.RESISTOR	33K	1/16W
R142	NRVA63D-103	M.F.RESISTOR	10K	1/16W
R143	NRVA63D-333	M.F.RESISTOR	33K	1/16W
R144	NRVA63D-103	M.F.RESISTOR	10K	1/16W
R151	NRVA63D-393	M.F.RESISTOR	39K	1/16W
R152	NRVA63D-184	M.F.RESISTOR	180K	1/16W
R153	NRVA63D-103	M.F.RESISTOR	10K	1/16W
R154	NRVA63D-124	M.F.RESISTOR	120K	1/16W
R155	NRVA63D-124	M.F.RESISTOR	120K	1/16W
R156	NRVA63D-152	M.F.RESISTOR	1.5K	1/16W
R157	NRVA63D-393	M.F.RESISTOR	39K	1/16W
R158	NRVA63D-184	M.F.RESISTOR	180K	1/16W
R159	NRVA63D-103	M.F.RESISTOR	10K	1/16W
R160	NRVA63D-124	M.F.RESISTOR	120K	1/16W
R161	NRVA63D-124	M.F.RESISTOR	120K	1/16W
R162	NRVA63D-152	M.F.RESISTOR	1.5K	1/16W
R163	NRVA63D-393	M.F.RESISTOR	39K	1/16W
R164	NRVA63D-184	M.F.RESISTOR	180K	1/16W
R165	NRVA63D-103	M.F.RESISTOR	10K	1/16W
R166	NRVA63D-124	M.F.RESISTOR	120K	1/16W
R167	NRVA63D-124	M.F.RESISTOR	120K	1/16W
R168	NRVA63D-152	M.F.RESISTOR	1.5K	1/16W
R169	NRVA63D-124	M.F.RESISTOR	120K	1/16W
R170	NRVA63D-133	M.F.RESISTOR	13K	1/16W
R171	NRVA63D-124	M.F.RESISTOR	120K	1/16W
R172	NRVA63D-133	M.F.RESISTOR	13K	1/16W
R173	NRVA63D-124	M.F.RESISTOR	120K	1/16W
R174	NRVA63D-133	M.F.RESISTOR	13K	1/16W
R175	NRSA63J-OR0	M.G.RESISTOR	0	1/16W
R181	NRVA63D-821	M.F.RESISTOR	820	1/16W
R182	NRVA63D-562	M.F.RESISTOR	5.6K	1/16W
R183	NRVA63D-183	M.F.RESISTOR	18K	1/16W
R184	NRVA63D-821	M.F.RESISTOR	820	1/16W
R185	NRVA63D-821	M.F.RESISTOR	820	1/16W

Symbol No.	Part No.	Part Name	Description	
R201	NRVA63D-331	M.F.RESISTOR	330	1/16W
R202	NRVA63D-221	M.F.RESISTOR	220	1/16W
R203	NRVA63D-122	M.F.RESISTOR	1.2K	1/16W
R204	NRVA63D-331	M.F.RESISTOR	330	1/16W
R205	NRVA63D-222	M.F.RESISTOR	2.2K	1/16W
R206	NRSA63J-684	M.G.RESISTOR	680K	1/16W
R207	NRVA63D-331	M.F.RESISTOR	330	1/16W
R208	NRVA63D-392	M.F.RESISTOR	3.9K	1/16W
R209	NRVA63D-102	M.F.RESISTOR	1.0K	1/16W
R210	NRVA63D-102	M.F.RESISTOR	1.0K	1/16W
R211	NRVA63D-221	M.F.RESISTOR	220	1/16W
R212	NRVA63D-104	M.F.RESISTOR	100K	1/16W
R213	NRVA63D-101	M.F.RESISTOR	100	1/16W
R215	NRVA63D-104	M.F.RESISTOR	100K	1/16W
R216	NRVA63D-473	M.F.RESISTOR	47K	1/16W
R217	NRVA63D-473	M.F.RESISTOR	47K	1/16W
R218	NRVA63D-273	M.F.RESISTOR	27K	1/16W
R219	NRVA63D-222	M.F.RESISTOR	2.2K	1/16W
R220	NRVA63D-563	M.F.RESISTOR	56K	1/16W
R221	NRVA63D-333	M.F.RESISTOR	33K	1/16W
R222	NRVA63D-273	M.F.RESISTOR	27K	1/16W
R223	NRVA63D-104	M.F.RESISTOR	100K	1/16W
R236	NRVA63D-101	M.F.RESISTOR	100	1/16W
R237	NRVA63D-473	M.F.RESISTOR	47K	1/16W
R238	NRVA63D-223	M.F.RESISTOR	22K	1/16W
R252	NRVA63D-102	M.F.RESISTOR	1.0K	1/16W
R253	NRVA63D-221	M.F.RESISTOR	220	1/16W
R254	NRVA63D-100	M.F.RESISTOR	10	1/16W
R255	NRVA63D-332	M.F.RESISTOR	3.3K	1/16W
R256	NRVA63D-470	M.F.RESISTOR	47	1/16W
R259	NRVA63D-102	M.F.RESISTOR	1.0K	1/16W
R264	NRVA63D-392	M.F.RESISTOR	3.9K	1/16W
R265	NRVA63D-183	M.F.RESISTOR	18K	1/16W
R266	NRVA63D-223	M.F.RESISTOR	22K	1/16W
R267	NRVA63D-152	M.F.RESISTOR	1.5K	1/16W
R271	NRVA63D-392	M.F.RESISTOR	3.9K	1/16W
R272	NRVA63D-183	M.F.RESISTOR	18K	1/16W
R273	NRVA63D-223	M.F.RESISTOR	22K	1/16W
R274	NRVA63D-152	M.F.RESISTOR	1.5K	1/16W
R275	NRVA63D-182	M.F.RESISTOR	1.8K	1/16W
R276	NRVA63D-152	M.F.RESISTOR	1.5K	1/16W
R277	NRVA63D-392	M.F.RESISTOR	3.9K	1/16W
R278	NRVA63D-182	M.F.RESISTOR	1.8K	1/16W
R279	NRVA63D-123	M.F.RESISTOR	12K	1/16W
R280	NRVA63D-103	M.F.RESISTOR	10K	1/16W
R281	NRVA63D-223	M.F.RESISTOR	22K	1/16W
R282	NRVA63D-223	M.F.RESISTOR	22K	1/16W
R283	NRVA63D-182	M.F.RESISTOR	1.8K	1/16W
R284	NRVA63D-220	M.F.RESISTOR	22	1/16W
C2	NEE51AM-476	TAN.CAPACITOR	47	10V
C3	NEHB1AM-477	E.CAPACITOR	470	10V
C4	NEE51EM-105	TAN.CAPACITOR	1.0	25V
C5	NCB31CK-473	CER.CAPACITOR	0.047	16V
C6	NCB31CK-473	CER.CAPACITOR	0.047	16V
C7	NCB31CK-473	CER.CAPACITOR	0.047	16V
C8	NCB31CK-473	CER.CAPACITOR	0.047	16V
C31	NEE51VM-155	TAN.CAPACITOR	1.5	35V
C32	NEE51VM-155	TAN.CAPACITOR	1.5	35V

Symbol No.	Part No.	Part Name	Description	
C33	NEE51VM-155	TAN.CAPACITOR	1.5	35V
C34	NCB31CK-473	CER.CAPACITOR	0.047	16V
C35	NEF10GM-336	TAN.CAPACITOR	33	4V
C36	NEE51CM-225	TAN.CAPACITOR	2.2	16V
C37	NEE51CM-226	TAN.CAPACITOR	22	16V
C38	NEF11DM-225	TAN.CAPACITOR	2.2	20V
C39	NEF11DM-225	TAN.CAPACITOR	2.2	20V
C41	NEF11VM-224	TAN.CAPACITOR	0.22	35V
C42	NEF11EM-475	TAN.CAPACITOR	4.7	25V
C43	NCB31CK-473	CER.CAPACITOR	0.047	16V
C44	NCB31CK-473	CER.CAPACITOR	0.047	16V
C45	NCB31CK-473	CER.CAPACITOR	0.047	16V
C46	NCB31CK-473	CER.CAPACITOR	0.047	16V
C47	NCF31EZ-104	CER.CAPACITOR	0.10	25V
C49	NCB31CK-473	CER.CAPACITOR	0.047	16V
C51	NEF11VM-224	TAN.CAPACITOR	0.22	35V
C52	NEF11EM-475	TAN.CAPACITOR	4.7	25V
C53	NCB31CK-473	CER.CAPACITOR	0.047	16V
C54	NCB31CK-473	CER.CAPACITOR	0.047	16V
C55	NCB31CK-473	CER.CAPACITOR	0.047	16V
C56	NCB31CK-473	CER.CAPACITOR	0.047	16V
C57	NCF31EZ-104	CER.CAPACITOR	0.10	25V
C61	NEF11VM-224	TAN.CAPACITOR	0.22	35V
C62	NEF11EM-475	TAN.CAPACITOR	4.7	25V
C63	NCB31CK-473	CER.CAPACITOR	0.047	16V
C64	NCB31CK-473	CER.CAPACITOR	0.047	16V
C65	NCB31CK-473	CER.CAPACITOR	0.047	16V
C66	NCB31CK-473	CER.CAPACITOR	0.047	16V
C67	NCF31EZ-104	CER.CAPACITOR	0.10	25V
C68	NCB31CK-473	CER.CAPACITOR	0.047	16V
C69	NCF31EZ-104	CER.CAPACITOR	0.10	25V
C70	NEE51VM-475	TAN.CAPACITOR	4.7	35V
C71	NCB31HK-103	CER.CAPACITOR	0.010	50V
C72	NEE51EM-105	TAN.CAPACITOR	1.0	25V
C73	NEF11CM-335	TAN.CAPACITOR	3.3	16V
C74	NCT06CH-100	CER.CAPACITOR	10P	50V
C75	NCT06CH-100	CER.CAPACITOR	10P	50V
C76	NCB31HK-103	CER.CAPACITOR	0.010	50V
C77	NCB31CK-473	CER.CAPACITOR	0.047	16V
C101	NCB31CK-473	CER.CAPACITOR	0.047	16V
C102	NCB31CK-473	CER.CAPACITOR	0.047	16V
C103	NCB31CK-473	CER.CAPACITOR	0.047	16V
C104	NCB31CK-473	CER.CAPACITOR	0.047	16V
C105	NEE51AM-476	TAN.CAPACITOR	47	10V
C106	NEHA0JM-686	E.CAPACITOR	68	6.3V
C107	NEE51AM-476	TAN.CAPACITOR	47	10V
C108	NEF11CM-335	TAN.CAPACITOR	3.3	16V
C109	NEE51AM-476	TAN.CAPACITOR	47	10V
C111	NCB31CK-473	CER.CAPACITOR	0.047	16V
C112	NEE51EM-105	TAN.CAPACITOR	1.0	25V
C113	NCT06CH-560	CER.CAPACITOR	56P	50V
C114	NCT06CH-560	CER.CAPACITOR	56P	50V
C115	NCB31HK-103	CER.CAPACITOR	0.010	50V
C116	NCB31CK-473	CER.CAPACITOR	0.047	16V
C121	NCB31CK-473	CER.CAPACITOR	0.047	16V
C122	NEE51EM-105	TAN.CAPACITOR	1.0	25V
C123	NCT06CH-101	CER.CAPACITOR	100P	50V
C124	NCT06CH-101	CER.CAPACITOR	100P	50V
C125	NCB31HK-103	CER.CAPACITOR	0.010	50V

Symbol No.	Part No.	Part Name	Description	
C126	NCB31CK-473	CER.CAPACITOR	0.047	16V
C127	NCB31CK-473	CER.CAPACITOR	0.047	16V
C141	NCF31EZ-104	CER.CAPACITOR	0.10	25V
C142	NCB31CK-473	CER.CAPACITOR	0.047	16V
C144	NCB31HK-152	CER.CAPACITOR	1500P	50V
C145	NCB31HK-272	CER.CAPACITOR	2700P	50V
C146	NCT06CH-331	CER.CAPACITOR	330P	50V
C149	NCB31CK-473	CER.CAPACITOR	0.047	16V
C150	NCB31CK-473	CER.CAPACITOR	0.047	16V
C151	NCB31CK-473	CER.CAPACITOR	0.047	16V
C152	NCB31CK-473	CER.CAPACITOR	0.047	16V
C153	NCB31CK-473	CER.CAPACITOR	0.047	16V
C154	NCB31CK-473	CER.CAPACITOR	0.047	16V
C155	NCB31CK-473	CER.CAPACITOR	0.047	16V
C156	NCT06CH-101	CER.CAPACITOR	100P	50V
C157	NCT06CH-101	CER.CAPACITOR	100P	50V
C158	NCT06CH-101	CER.CAPACITOR	100P	50V
C202	NCT06CH-101	CER.CAPACITOR	100P	50V
C204	NCB31CK-473	CER.CAPACITOR	0.047	16V
C205	NCB31CK-473	CER.CAPACITOR	0.047	16V
C206	NCB31HK-103	CER.CAPACITOR	0.010	50V
C207	NCB31CK-473	CER.CAPACITOR	0.047	16V
C208	NCB31CK-473	CER.CAPACITOR	0.047	16V
C209	NCB31CK-473	CER.CAPACITOR	0.047	16V
C210	NCB31CK-473	CER.CAPACITOR	0.047	16V
C211	NCB31CK-473	CER.CAPACITOR	0.047	16V
C212	NCT06CH-560	CER.CAPACITOR	56P	50V
C213	NCB31CK-473	CER.CAPACITOR	0.047	16V
C214	NCB31CK-473	CER.CAPACITOR	0.047	16V
C215	NCB31CK-473	CER.CAPACITOR	0.047	16V
C216	NCB31CK-473	CER.CAPACITOR	0.047	16V
C217	NCB31CK-473	CER.CAPACITOR	0.047	16V
C218	NCF31EZ-104	CER.CAPACITOR	0.10	25V
C219	NCB31CK-473	CER.CAPACITOR	0.047	16V
C220	NEE51AM-476	TAN.CAPACITOR	47	10V
C221	NEE51AM-476	TAN.CAPACITOR	47	10V
C222	NCB31CK-473	CER.CAPACITOR	0.047	16V
C235	NCT06CH-331	CER.CAPACITOR	330P	50V
C236	NCF31EZ-104	CER.CAPACITOR	0.10	25V
C237	NCB31CK-473	CER.CAPACITOR	0.047	16V
C238	NCB31HK-103	CER.CAPACITOR	0.010	50V
C241	NCB31CK-473	CER.CAPACITOR	0.047	16V
C253	NEE51EM-105	TAN.CAPACITOR	1.0	25V
C254	NCT03CH-102	CER.CAPACITOR	1000P	50V
C255	NCB31CK-473	CER.CAPACITOR	0.047	16V
C256	NEE50GM-476	TAN.CAPACITOR	47	4V
C258	NEE51EM-105	TAN.CAPACITOR	1.0	25V
C260	NCB31CK-473	CER.CAPACITOR	0.047	16V
C261	NEE50GM-476	TAN.CAPACITOR	47	4V
C265	NEE51EM-105	TAN.CAPACITOR	1.0	25V
C266	NCB31CK-473	CER.CAPACITOR	0.047	16V
C267	NEE50GM-476	TAN.CAPACITOR	47	4V
C268	NCB31CK-473	CER.CAPACITOR	0.047	16V
C269	NCB31CK-473	CER.CAPACITOR	0.047	16V
C270	NCB31CK-473	CER.CAPACITOR	0.047	16V
C271	NCB31CK-473	CER.CAPACITOR	0.047	16V
C272	NEE51AM-476	TAN.CAPACITOR	47	10V
C273	NEHA0JM-686	E.CAPACITOR	68	6.3V
C274	NEE51AM-476	TAN.CAPACITOR	47	10V

[ST]

5.2 ISB BOARD ASSEMBLY LIST 02

SCK2447-02-00A

02

Symbol No.	Part No.	Part Name	Description
C275	NEF11CM-155	TAN.CAPACITOR	1.5 16V
C276	NEF11CM-155	TAN.CAPACITOR	1.5 16V
C350	NCB31CK-473	CER.CAPACITOR	0.047 16V
C351	NCB31CK-473	CER.CAPACITOR	0.047 16V
C352	NCB31CK-473	CER.CAPACITOR	0.047 16V
C353	NCB31CK-473	CER.CAPACITOR	0.047 16V
C354	NCB31CK-473	CER.CAPACITOR	0.047 16V
C355	NCB31CK-473	CER.CAPACITOR	0.047 16V
C356	NCB31CK-473	CER.CAPACITOR	0.047 16V
C357	NCB31CK-473	CER.CAPACITOR	0.047 16V
C358	NCB31CK-473	CER.CAPACITOR	0.047 16V
C359	NCB31CK-473	CER.CAPACITOR	0.047 16V
L1	SCV2662-027	FERRITE BEADS	12μH
L2	SCV2662-027	FERRITE BEADS	
L3	SCV2662-027	FERRITE BEADS	
L4	SCV2662-027	FERRITE BEADS	
L5	SCV2662-027	FERRITE BEADS	
L6	SCV2662-027	FERRITE BEADS	
L7	SCV2662-027	FERRITE BEADS	
L9	SCV2662-027	FERRITE BEADS	
L103	SCV1950-120	PEAKING COIL	
L251	SCV2662-027	FERRITE BEADS	
LC1	SCV1804-222	EMI FILTER	
LC2	SCV1804-222	EMI FILTER	
LC3	SCV1804-222	EMI FILTER	
LC4	SCV1804-222	EMI FILTER	
LC101	SCV1804-222	EMI FILTER	
LC102	SCV1804-222	EMI FILTER	
LC103	SCV1804-222	EMI FILTER	
LC104	SCV1804-222	EMI FILTER	
X1	CE41212-001	CRYSTAL	28.375MHz
X2	CE42275-001	CRYSTAL	17.734475MHz
CN1	SSV2614-24	CONNECTOR	24-PIN
CN2	SSV2614-24	CONNECTOR	24-PIN
CN13	SSV2614-20	FFC CONNECTOR	20-PIN
CN14	SSV2614-20	FFC CONNECTOR	20-PIN
CN15	SSV2614-20	FFC CONNECTOR	20-PIN
TP101	SCV1880-001	TEST POINT	VD
TP102	SCV1880-001	TEST POINT	HD
TP103	SCV1880-001	TEST POINT	SC
TP104	SCV1880-001	TEST POINT	Eoh
TP105	SCV1880-001	TEST POINT	Eos

Symbol No.	Part No.	Part Name	Description
SK1	SCV2404-001	IC SOCKET	for IC1
IC2	CXA1439M	I.C.(M)	SONY
IC3	AD8011AR	I.C.(M)	ANALOG DEVICES
Q1	2SC4626(BC)	TRANSISTOR	MATSUSHITA
R1	NRVA63D-332	M.F.RESISTOR	3.3K 1/16W
R2	NRVA63D-101	M.F.RESISTOR	100 1/16W
R3	NRVA63D-472	M.F.RESISTOR	4.7K 1/16W
R4	NRVA63D-682	M.F.RESISTOR	6.8K 1/16W
R6	NRVA63D-101	M.F.RESISTOR	100 1/16W
R7	NRVA63D-751	M.F.RESISTOR	750 1/16W
R8	NRVA63D-102	M.F.RESISTOR	1.0K 1/16W
R9	NRVA63D-561	M.F.RESISTOR	560 1/16W
R10	NRSA63J-105	M.G.RESISTOR	1.0M 1/16W
R11	NRVA63D-220	M.F.RESISTOR	22 1/16W
C1	NEE51VM-225	TAN.CAPACITOR	2.2 35V
C2	NCB21EK-473	CER.CAPACITOR	0.047 25V
C3	NCB21EK-473	CER.CAPACITOR	0.047 25V
C5	NCB31CK-473	CER.CAPACITOR	0.047 16V
C6	NCB31CK-473	CER.CAPACITOR	0.047 16V
C7	NCB31CK-473	CER.CAPACITOR	0.047 16V
C8	NCB31CK-473	CER.CAPACITOR	0.047 16V
C9	NCB31CK-473	CER.CAPACITOR	0.047 16V
C11	NCB31CK-473	CER.CAPACITOR	0.047 16V
C12	NCB31CK-473	CER.CAPACITOR	0.047 16V
C13	NCB31CK-473	CER.CAPACITOR	0.047 16V
C14	NCB31CK-473	CER.CAPACITOR	0.047 16V
C17	NCB31CK-473	CER.CAPACITOR	0.047 16V
LC1	SCV1804-222	EMI FILTER	
LC2	SCV1804-222	EMI FILTER	
LC3	SCV1804-222	EMI FILTER	
LC4	SCV1804-222	EMI FILTER	
LC5	SCV1804-222	EMI FILTER	
CN13	SSV2615-20	FFC CONNECTOR	20-PIN
CN23	SCV1770-004	CONNECTOR	4-PIN
TP1	SCV1880-001	TEST POINT	

5.3 ISG BOARD ASSEMBLY LIST 03

SCK2447-03-00A

03

Symbol No.	Part No.	Part Name	Description
SK1	SCV2404-001	IC SOCKET	for IC1
IC2	CXA1439M	I.C.(M)	SONY
IC3	AD8011AR	I.C.(M)	ANALOG DEVICES
Q1	2SC4626(BC)	TRANSISTOR	MATSUSHITA
Q2	3SK157	F.E.T.	NEC
R1	NRVA63D-332	M.F.RESISTOR	3.3K 1/16W
R2	NRVA63D-101	M.F.RESISTOR	100 1/16W
R3	NRVA63D-472	M.F.RESISTOR	4.7K 1/16W
R4	NRVA63D-682	M.F.RESISTOR	6.8K 1/16W
R5	NRVA63D-332	M.F.RESISTOR	3.3K 1/16W
R7	NRVA63D-122	M.F.RESISTOR	1.2K 1/16W
R8	NRVA63D-102	M.F.RESISTOR	1.0K 1/16W
R9	NRVA63D-152	M.F.RESISTOR	1.5K 1/16W
R10	NRSA63J-105	M.G.RESISTOR	1.0M 1/16W
R11	NRVA63D-220	M.F.RESISTOR	22 1/16W
C1	NEE51VM-225	TAN.CAPACITOR	2.2 35V
C2	NCB21EK-473	CER.CAPACITOR	0.047 25V
C3	NCB21EK-473	CER.CAPACITOR	0.047 25V
C5	NCB31CK-473	CER.CAPACITOR	0.047 16V
C6	NCB31CK-473	CER.CAPACITOR	0.047 16V
C7	NCB31CK-473	CER.CAPACITOR	0.047 16V
C8	NCB31CK-473	CER.CAPACITOR	0.047 16V
C9	NCB31CK-473	CER.CAPACITOR	0.047 16V
C10	NCT06CH-330	CER.CAPACITOR	33P 50V
C11	NCB31CK-473	CER.CAPACITOR	0.047 16V
C12	NCB31CK-473	CER.CAPACITOR	0.047 16V
C13	NCB31CK-473	CER.CAPACITOR	0.047 16V
C14	NCB31CK-473	CER.CAPACITOR	0.047 16V
C17	NCB31CK-473	CER.CAPACITOR	0.047 16V
LC1	SCV1804-222	EMI FILTER	
LC2	SCV1804-222	EMI FILTER	
LC3	SCV1804-222	EMI FILTER	
LC4	SCV1804-222	EMI FILTER	
LC5	SCV1804-222	EMI FILTER	
CN14	SSV2615-20	FFC CONNECTOR	20-PIN
CN24	SCV1770-004	CONNECTOR	4-PIN
TP1	SCV1880-001	TEST POINT	

5.4 ISR BOARD ASSEMBLY LIST 04

SCK2447-04-00A

04

Symbol No.	Part No.	Part Name	Description
SK1	SCV2404-001	IC SOCKET	for IC1
IC2	CXA1439M	I.C.(M)	SONY
IC3	AD8011AR	I.C.(M)	ANALOG DEVICES
Q1	2SC4626(BC)	TRANSISTOR	MATSUSHITA
R1	NRVA63D-332	M.F.RESISTOR	3.3K 1/16W
R2	NRVA63D-101	M.F.RESISTOR	100 1/16W
R3	NRVA63D-472	M.F.RESISTOR	4.7K 1/16W
R4	NRVA63D-682	M.F.RESISTOR	6.8K 1/16W
R6	NRVA63D-101	M.F.RESISTOR	100 1/16W
R7	NRVA63D-911	M.F.RESISTOR	910 1/16W
R8	NRVA63D-102	M.F.RESISTOR	1.0K 1/16W
R9	NRVA63D-821	M.F.RESISTOR	820 1/16W
R10	NRSA63J-105	M.G.RESISTOR	1.0M 1/16W
R11	NRVA63D-220	M.F.RESISTOR	22 1/16W
C1	NEE51VM-225	TAN.CAPACITOR	2.2 35V
C2	NCB21EK-473	CER.CAPACITOR	0.047 25V
C3	NCB21EK-473	CER.CAPACITOR	0.047 25V
C5	NCB31CK-473	CER.CAPACITOR	0.047 16V
C6	NCB31CK-473	CER.CAPACITOR	0.047 16V
C7	NCB31CK-473	CER.CAPACITOR	0.047 16V
C8	NCB31CK-473	CER.CAPACITOR	0.047 16V
C9	NCB31CK-473	CER.CAPACITOR	0.047 16V
C11	NCB31CK-473	CER.CAPACITOR	0.047 16V
C12	NCB31CK-473	CER.CAPACITOR	0.047 16V
C13	NCB31CK-473	CER.CAPACITOR	0.047 16V
C14	NCB31CK-473	CER.CAPACITOR	0.047 16V
C17	NCB31CK-473	CER.CAPACITOR	0.047 16V
LC1	SCV1804-222	EMI FILTER	
LC2	SCV1804-222	EMI FILTER	
LC3	SCV1804-222	EMI FILTER	
LC4	SCV1804-222	EMI FILTER	
LC5	SCV1804-222	EMI FILTER	
CN15	SSV2615-20	FFC CONNECTOR	20-PIN
CN25	SCV1770-004	CONNECTOR	4-PIN
TP1	SCV1880-001	TEST POINT	

5.5 PR BOARD ASSEMBLY LIST 05

SCK2443-01-00B

05

Symbol No.	Part No.	Part Name	Description
IC2	TC7S86F	I.C.(M)	TOSHIBA
IC3	TC7S04F	I.C.(M)	TOSHIBA
IC4	M888345PF	I.C.(M)	FUJITSU
IC5	NJM78L05UA	I.C.(M)	JRC
IC401	AD803AR	I.C.(M)	ANALOG DEVICES
IC402	LMC6082IM	I.C.(M)	NATIONAL SEMICO
IC403	TC4S66F	I.C.(M)	TOSHIBA
IC404	MC74HC4053F	I.C.(M)	MOTOROLA
IC405	CLC501AJE	I.C.(M)	COMLINEAR
IC406	MC74HC4053F	I.C.(M)	MOTOROLA
IC407	AD8011AR	I.C.(M)	ANALOG DEVICES
IC408	TC4S66F	I.C.(M)	TOSHIBA
IC409	TC4S66F	I.C.(M)	TOSHIBA
IC410	NJM062M	I.C.(M)	JRC
IC411	AD8011AR	I.C.(M)	ANALOG DEVICES
IC412	TC4S66F	I.C.(M)	TOSHIBA
IC413	NJM062M	I.C.(M)	JRC
IC501	AD603AR	I.C.(M)	ANALOG DEVICES
IC502	LMC6082IM	I.C.(M)	NATIONAL SEMICO
IC503	TC4S66F	I.C.(M)	TOSHIBA
IC505	CLC501AJE	I.C.(M)	COMLINEAR
IC506	TL441CNS	I.C.(M)	TEXAS
IC507	AD8011AR	I.C.(M)	ANALOG DEVICES
IC508	TC4S66F	I.C.(M)	TOSHIBA
IC509	TC4S66F	I.C.(M)	TOSHIBA
IC510	NJM062M	I.C.(M)	JRC
IC511	AD8011AR	I.C.(M)	ANALOG DEVICES
IC512	TC4S66F	I.C.(M)	TOSHIBA
IC513	NJM062M	I.C.(M)	JRC
IC601	AD603AR	I.C.(M)	ANALOG DEVICES
IC602	LMC6082IM	I.C.(M)	NATIONAL SEMICO
IC603	TC4S66F	I.C.(M)	TOSHIBA
IC605	CLC501AJE	I.C.(M)	COMLINEAR
IC606	TL441CNS	I.C.(M)	TEXAS
IC607	AD8011AR	I.C.(M)	ANALOG DEVICES
IC608	TC4S66F	I.C.(M)	TOSHIBA
IC609	TC4S66F	I.C.(M)	TOSHIBA
IC610	NJM062M	I.C.(M)	JRC
IC611	AD8011AR	I.C.(M)	ANALOG DEVICES
IC612	TC4S66F	I.C.(M)	TOSHIBA
IC613	NJM062M	I.C.(M)	JRC
Q1	DTA124EU	TRANSISTOR	ROHM
Q401	2SC4626(BC)	TRANSISTOR	MATSUSHITA
Q402	2SC4626(BC)	TRANSISTOR	MATSUSHITA
Q403	2SC4626(BC)	TRANSISTOR	MATSUSHITA
Q501	2SC4626(BC)	TRANSISTOR	MATSUSHITA
Q502	2SC4626(BC)	TRANSISTOR	MATSUSHITA
Q503	2SC4626(BC)	TRANSISTOR	MATSUSHITA
Q601	2SC4626(BC)	TRANSISTOR	MATSUSHITA
Q602	2SC4626(BC)	TRANSISTOR	MATSUSHITA
Q603	2SC4626(BC)	TRANSISTOR	MATSUSHITA
D401	MA142WK	DIODE	MATSUSHITA
D402	MA742	DIODE	MATSUSHITA
D501	MA142WK	DIODE	MATSUSHITA
D502	MA742	DIODE	MATSUSHITA
D601	MA142WK	DIODE	MATSUSHITA
D602	MA742	DIODE	MATSUSHITA

Symbol No.	Part No.	Part Name	Description
R1	NRVA63D-473	M.F.RESISTOR	47K 1/16W
R2	NRVA63D-223	M.F.RESISTOR	22K 1/16W
R3	NRVA63D-223	M.F.RESISTOR	22K 1/16W
R4	NRVA63D-223	M.F.RESISTOR	22K 1/16W
R5	NRVA63D-274	M.F.RESISTOR	270K 1/16W
R6	NRVA63D-102	M.F.RESISTOR	1K 1/16W
R7	NRVA63D-223	M.F.RESISTOR	22K 1/16W
R8	NRVA63D-223	M.F.RESISTOR	22K 1/16W
R9	NRVA63D-473	M.F.RESISTOR	47K 1/16W
R10	NRVA63D-473	M.F.RESISTOR	47K 1/16W
R11	NRVA63D-274	M.F.RESISTOR	270K 1/16W
R12	NRVA63D-112	M.F.RESISTOR	1.1K 1/16W
R13	NRVA63D-181	M.F.RESISTOR	180 1/16W
R14	NRVA63D-562	M.F.RESISTOR	5.6K 1/16W
R21	NRVA63D-223	M.F.RESISTOR	22K 1/16W
R23	NRSA63J-0R0	M.G.RESISTOR	0 1/16W
R401	NRVA63D-122	M.F.RESISTOR	1.2K 1/16W
R402	NRVA63D-123	M.F.RESISTOR	12K 1/16W
R403	NRVA63D-222	M.F.RESISTOR	2.2K 1/16W
R404	NRVA63D-222	M.F.RESISTOR	2.2K 1/16W
R405	NRVA63D-472	M.F.RESISTOR	4.7K 1/16W
R406	NRVA63D-332	M.F.RESISTOR	3.3K 1/16W
R407	NRSA63J-2R2	M.G.RESISTOR	2.2 1/16W
R408	NRVA63D-152	M.F.RESISTOR	1.5K 1/16W
R410	NRVA63D-104	M.F.RESISTOR	100K 1/16W
R411	NRSA63J-105	M.G.RESISTOR	1.0M 1/16W
R412	NRVA63D-124	M.F.RESISTOR	120K 1/16W
R413	NRVA63D-184	M.F.RESISTOR	180K 1/16W
R414	NRVA63D-222	M.F.RESISTOR	2.2K 1/16W
R415	NRVA63D-102	M.F.RESISTOR	1.0K 1/16W
R416	NRVA63D-471	M.F.RESISTOR	470 1/16W
R417	NRVA63D-332	M.F.RESISTOR	3.3K 1/16W
R418	NRVA63D-273	M.F.RESISTOR	27K 1/16W
R419	NRVA63D-821	M.F.RESISTOR	820 1/16W
R420	NRVA63D-103	M.F.RESISTOR	10K 1/16W
R421	NRVA63D-152	M.F.RESISTOR	1.5K 1/16W
R422	NRVA63D-821	M.F.RESISTOR	820 1/16W
R423	NRVA63D-103	M.F.RESISTOR	10K 1/16W
R424	NRVA63D-561	M.F.RESISTOR	560 1/16W
R425	NRVA63D-471	M.F.RESISTOR	470 1/16W
R426	NRVA63D-222	M.F.RESISTOR	2.2K 1/16W
R427	NRVA63D-222	M.F.RESISTOR	2.2K 1/16W
R428	NRVA63D-101	M.F.RESISTOR	100 1/16W
R429	NRVA63D-822	M.F.RESISTOR	8.2K 1/16W
R430	NRVA63D-561	M.F.RESISTOR	560 1/16W
R431	NRVA63D-222	M.F.RESISTOR	2.2K 1/16W
R432	NRVA63D-561	M.F.RESISTOR	560 1/16W
R433	NRVA63D-152	M.F.RESISTOR	1.5K 1/16W
R434	NRVA63D-472	M.F.RESISTOR	4.7K 1/16W
R435	NRVA63D-821	M.F.RESISTOR	820 1/16W
R436	NRVA63D-182	M.F.RESISTOR	1.8K 1/16W
R437	NRVA63D-100	M.F.RESISTOR	10 1/16W
R438	NRVA63D-183	M.F.RESISTOR	18K 1/16W
R439	NRVA63D-363	M.F.RESISTOR	36K 1/16W
R440	NRVA63D-104	M.F.RESISTOR	100K 1/16W
R441	NRVA63D-102	M.F.RESISTOR	1.0K 1/16W
R442	NRVA63D-821	M.F.RESISTOR	820 1/16W
R443	NRVA63D-821	M.F.RESISTOR	820 1/16W
R444	NRVA63D-563	M.F.RESISTOR	56K 1/16W
R445	NRVA63D-822	M.F.RESISTOR	8.2K 1/16W
R446	NRVA63D-562	M.F.RESISTOR	5.6K 1/16W

Symbol No.	Part No.	Part Name	Description	
R447	NRVA63D-682	M.F.RESISTOR	6.8K	1/16W
R448	NRVA63D-243	M.F.RESISTOR	24K	1/16W
R449	NRVA63D-123	M.F.RESISTOR	12K	1/16W
R450	NRVA63D-102	M.F.RESISTOR	1.0K	1/16W
R451	NRVA63D-102	M.F.RESISTOR	1.0K	1/16W
R452	NRVA63D-221	M.F.RESISTOR	220	1/16W
R453	NRVA63D-154	M.F.RESISTOR	150K	1/16W
R454	NRVA63D-822	M.F.RESISTOR	8.2K	1/16W
R456	NRVA63D-472	M.F.RESISTOR	4.7K	1/16W
R457	NRVA63D-224	M.F.RESISTOR	220K	1/16W
R458	NRVA63D-103	M.F.RESISTOR	10K	1/16W
R461	NRVA63D-274	M.F.RESISTOR	270K	1/16W
R462	NRVA63D-104	M.F.RESISTOR	100K	1/16W
R501	NRVA63D-122	M.F.RESISTOR	1.2K	1/16W
R502	NRVA63D-123	M.F.RESISTOR	12K	1/16W
R503	NRVA63D-222	M.F.RESISTOR	2.2K	1/16W
R504	NRVA63D-222	M.F.RESISTOR	2.2K	1/16W
R505	NRVA63D-472	M.F.RESISTOR	4.7K	1/16W
R506	NRVA63D-332	M.F.RESISTOR	3.3K	1/16W
R507	NRSA63J-2R2	M.G.RESISTOR	2.2	1/16W
R508	NRVA63D-331	M.F.RESISTOR	330	1/16W
R510	NRVA63D-104	M.F.RESISTOR	100K	1/16W
R511	NRSA63J-105	M.G.RESISTOR	1.0M	1/16W
R512	NRVA63D-124	M.F.RESISTOR	120K	1/16W
R513	NRVA63D-184	M.F.RESISTOR	180K	1/16W
R514	NRVA63D-222	M.F.RESISTOR	2.2K	1/16W
R515	NRVA63D-102	M.F.RESISTOR	1.0K	1/16W
R516	NRVA63D-471	M.F.RESISTOR	470	1/16W
R517	NRVA63D-332	M.F.RESISTOR	3.3K	1/16W
R518	NRVA63D-273	M.F.RESISTOR	27K	1/16W
R519	NRVA63D-681	M.F.RESISTOR	680	1/16W
R520	NRVA63D-103	M.F.RESISTOR	10K	1/16W
R521	NRVA63D-152	M.F.RESISTOR	1.5K	1/16W
R522	NRVA63D-821	M.F.RESISTOR	820	1/16W
R523	NRVA63D-103	M.F.RESISTOR	10K	1/16W
R524	NRVA63D-561	M.F.RESISTOR	560	1/16W
R525	NRVA63D-471	M.F.RESISTOR	470	1/16W
R526	NRVA63D-222	M.F.RESISTOR	2.2K	1/16W
R527	NRVA63D-222	M.F.RESISTOR	2.2K	1/16W
R528	NRVA63D-101	M.F.RESISTOR	100	1/16W
R529	NRVA63D-822	M.F.RESISTOR	8.2K	1/16W
R530	NRVA63D-561	M.F.RESISTOR	560	1/16W
R531	NRVA63D-222	M.F.RESISTOR	2.2K	1/16W
R532	NRVA63D-561	M.F.RESISTOR	560	1/16W
R533	NRVA63D-152	M.F.RESISTOR	1.5K	1/16W
R534	NRVA63D-472	M.F.RESISTOR	4.7K	1/16W
R535	NRVA63D-821	M.F.RESISTOR	820	1/16W
R536	NRVA63D-182	M.F.RESISTOR	1.8K	1/16W
R537	NRVA63D-100	M.F.RESISTOR	10	1/16W
R538	NRVA63D-183	M.F.RESISTOR	18K	1/16W
R539	NRVA63D-363	M.F.RESISTOR	36K	1/16W
R540	NRVA63D-104	M.F.RESISTOR	100K	1/16W
R541	NRVA63D-102	M.F.RESISTOR	1.0K	1/16W
R542	NRVA63D-821	M.F.RESISTOR	820	1/16W
R543	NRVA63D-821	M.F.RESISTOR	820	1/16W
R544	NRVA63D-123	M.F.RESISTOR	12K	1/16W
R545	NRVA63D-333	M.F.RESISTOR	33K	1/16W
R546	NRVA63D-562	M.F.RESISTOR	5.6K	1/16W
R547	NRVA63D-682	M.F.RESISTOR	6.8K	1/16W
R548	NRVA63D-393	M.F.RESISTOR	39K	1/16W

Symbol No.	Part No.	Part Name	Description	
R549	NRVA63D-103	M.F.RESISTOR	10K	1/16W
R550	NRVA63D-102	M.F.RESISTOR	1.0K	1/16W
R551	NRVA63D-102	M.F.RESISTOR	1.0K	1/16W
R552	NRVA63D-221	M.F.RESISTOR	220	1/16W
R553	NRVA63D-154	M.F.RESISTOR	150K	1/16W
R554	NRVA63D-822	M.F.RESISTOR	8.2K	1/16W
R555	NRSA63J-0R0	M.G.RESISTOR	0	1/16W
R556	NRVA63D-472	M.F.RESISTOR	4.7K	1/16W
R557	NRVA63D-224	M.F.RESISTOR	220K	1/16W
R558	NRVA63D-103	M.F.RESISTOR	10K	1/16W
R561	NRVA63D-274	M.F.RESISTOR	270K	1/16W
R562	NRVA63D-104	M.F.RESISTOR	100K	1/16W
R601	NRVA63D-122	M.F.RESISTOR	1.2K	1/16W
R602	NRVA63D-123	M.F.RESISTOR	12K	1/16W
R603	NRVA63D-222	M.F.RESISTOR	2.2K	1/16W
R604	NRVA63D-222	M.F.RESISTOR	2.2K	1/16W
R605	NRVA63D-472	M.F.RESISTOR	4.7K	1/16W
R606	NRVA63D-332	M.F.RESISTOR	3.3K	1/16W
R607	NRSA63J-2R2	M.G.RESISTOR	2.2	1/16W
R608	NRVA63D-122	M.F.RESISTOR	1.2K	1/16W
R610	NRVA63D-104	M.F.RESISTOR	100K	1/16W
R611	NRSA63J-105	M.G.RESISTOR	1.0M	1/16W
R612	NRVA63D-124	M.F.RESISTOR	120K	1/16W
R613	NRVA63D-184	M.F.RESISTOR	180K	1/16W
R614	NRVA63D-222	M.F.RESISTOR	2.2K	1/16W
R615	NRVA63D-102	M.F.RESISTOR	1.0K	1/16W
R616	NRVA63D-471	M.F.RESISTOR	470	1/16W
R617	NRVA63D-332	M.F.RESISTOR	3.3K	1/16W
R618	NRVA63D-273	M.F.RESISTOR	27K	1/16W
R619	NRVA63D-821	M.F.RESISTOR	820	1/16W
R620	NRVA63D-103	M.F.RESISTOR	10K	1/16W
R621	NRVA63D-152	M.F.RESISTOR	1.5K	1/16W
R622	NRVA63D-821	M.F.RESISTOR	820	1/16W
R623	NRVA63D-103	M.F.RESISTOR	10K	1/16W
R624	NRVA63D-561	M.F.RESISTOR	560	1/16W
R625	NRVA63D-471	M.F.RESISTOR	470	1/16W
R626	NRVA63D-222	M.F.RESISTOR	2.2K	1/16W
R627	NRVA63D-222	M.F.RESISTOR	2.2K	1/16W
R628	NRVA63D-101	M.F.RESISTOR	100	1/16W
R629	NRVA63D-822	M.F.RESISTOR	8.2K	1/16W
R630	NRVA63D-561	M.F.RESISTOR	560	1/16W
R631	NRVA63D-222	M.F.RESISTOR	2.2K	1/16W
R632	NRVA63D-561	M.F.RESISTOR	560	1/16W
R633	NRVA63D-152	M.F.RESISTOR	1.5K	1/16W
R634	NRVA63D-472	M.F.RESISTOR	4.7K	1/16W
R635	NRVA63D-821	M.F.RESISTOR	820	1/16W
R636	NRVA63D-182	M.F.RESISTOR	1.8K	1/16W
R637	NRVA63D-100	M.F.RESISTOR	10	1/16W
R638	NRVA63D-183	M.F.RESISTOR	18K	1/16W
R639	NRVA63D-363	M.F.RESISTOR	36K	1/16W
R640	NRVA63D-104	M.F.RESISTOR	100K	1/16W
R641	NRVA63D-102	M.F.RESISTOR	1.0K	1/16W
R642	NRVA63D-821	M.F.RESISTOR	820	1/16W
R643	NRVA63D-821	M.F.RESISTOR	820	1/16W
R644	NRVA63D-103	M.F.RESISTOR	10K	1/16W
R645	NRSA63J-105	M.G.RESISTOR	1.0M	1/16W
R646	NRVA63D-562	M.F.RESISTOR	5.6K	1/16W
R647	NRVA63D-682	M.F.RESISTOR	6.8K	1/16W
R648	NRVA63D-183	M.F.RESISTOR	18K	1/16W
R649	NRVA63D-183	M.F.RESISTOR	18K	1/16W

[PRI]

Symbol No.	Part No.	Part Name	Description	
R650	NRVA63D-102	M.F.RESISTOR	1.0K	1/16W
R651	NRVA63D-102	M.F.RESISTOR	1.0K	1/16W
R652	NRVA63D-221	M.F.RESISTOR	220	1/16W
R653	NRVA63D-154	M.F.RESISTOR	150K	1/16W
R654	NRVA63D-822	M.F.RESISTOR	8.2K	1/16W
R656	NRVA63D-472	M.F.RESISTOR	4.7K	1/16W
R657	NRVA63D-224	M.F.RESISTOR	220K	1/16W
R658	NRVA63D-103	M.F.RESISTOR	10K	1/16W
R661	NRVA63D-274	M.F.RESISTOR	270K	1/16W
R662	NRVA63D-104	M.F.RESISTOR	100K	1/16W
C1	NEE51AM-476	TAN.CAPACITOR	47	10V
C2	NEE51AM-476	TAN.CAPACITOR	47	10V
C3	NCB31CK-473	CER.CAPACITOR	0.047	16V
C4	NCB31CK-473	CER.CAPACITOR	0.047	16V
C5	NCB31CK-473	CER.CAPACITOR	0.047	16V
C6	NEE51AM-106	TAN.CAPACITOR	10	10V
C7	NCB31CK-473	CER.CAPACITOR	0.047	16V
C9	NCB31CK-473	CER.CAPACITOR	0.047	16V
C11	NEE51AM-476	TAN.CAPACITOR	47	10V
C12	NEE51CM-225	TAN.CAPACITOR	2.2	16V
C17	NCB31CK-473	CER.CAPACITOR	0.047	16V
C401	NCB31CK-473	CER.CAPACITOR	0.047	16V
C402	NCB31CK-473	CER.CAPACITOR	0.047	16V
C403	NCB31CK-473	CER.CAPACITOR	0.047	16V
C404	NCB31CK-473	CER.CAPACITOR	0.047	16V
C405	NCB21HK-103	CER.CAPACITOR	0.010	50V
C406	NCB31CK-473	CER.CAPACITOR	0.047	16V
C407	NCB31CK-473	CER.CAPACITOR	0.047	16V
C410	NCB31CK-473	CER.CAPACITOR	0.047	16V
C411	NCB31CK-473	CER.CAPACITOR	0.047	16V
C413	NCB31CK-473	CER.CAPACITOR	0.047	16V
C414	NCB31CK-473	CER.CAPACITOR	0.047	16V
C415	NCB31CK-473	CER.CAPACITOR	0.047	16V
C417	NCB31CK-473	CER.CAPACITOR	0.047	16V
C419	NCB31CK-473	CER.CAPACITOR	0.047	16V
C420	NCB31CK-473	CER.CAPACITOR	0.047	16V
C421	NCB31CK-473	CER.CAPACITOR	0.047	16V
C424	NCB31CK-473	CER.CAPACITOR	0.047	16V
C425	NCT06CH-7R0	CER.CAPACITOR	7.0P	50V
C426	NCT06CH-331	CER.CAPACITOR	330P	50V
C501	NCB31CK-473	CER.CAPACITOR	0.047	16V
C502	NCB31CK-473	CER.CAPACITOR	0.047	16V
C503	NCB31CK-473	CER.CAPACITOR	0.047	16V
C504	NCB31CK-473	CER.CAPACITOR	0.047	16V
C505	NCB21HK-103	CER.CAPACITOR	0.010	50V
C506	NCB31CK-473	CER.CAPACITOR	0.047	16V
C507	NCB31CK-473	CER.CAPACITOR	0.047	16V
C510	NCB31CK-473	CER.CAPACITOR	0.047	16V
C511	NCB31CK-473	CER.CAPACITOR	0.047	16V
C513	NCB31CK-473	CER.CAPACITOR	0.047	16V
C514	NCB31CK-473	CER.CAPACITOR	0.047	16V
C515	NCB31CK-473	CER.CAPACITOR	0.047	16V
C517	NCB31CK-473	CER.CAPACITOR	0.047	16V
C518	NCB31CK-473	CER.CAPACITOR	0.047	16V
C519	NCB31CK-473	CER.CAPACITOR	0.047	16V
C520	NCB31CK-473	CER.CAPACITOR	0.047	16V
C521	NCB31CK-473	CER.CAPACITOR	0.047	16V
C522	NCB31CK-473	CER.CAPACITOR	0.047	16V
C523	NCB31CK-473	CER.CAPACITOR	0.047	16V
C524	NCB31CK-473	CER.CAPACITOR	0.047	16V

Symbol No.	Part No.	Part Name	Description	
C525	NCT06CH-7R0	CER.CAPACITOR	7.0P	50V
C526	NCT06CH-331	CER.CAPACITOR	330P	50V
C601	NCB31CK-473	CER.CAPACITOR	0.047	16V
C602	NCB31CK-473	CER.CAPACITOR	0.047	16V
C603	NCB31CK-473	CER.CAPACITOR	0.047	16V
C604	NCB31CK-473	CER.CAPACITOR	0.047	16V
C605	NCB21HK-103	CER.CAPACITOR	0.010	50V
C606	NCB31CK-473	CER.CAPACITOR	0.047	16V
C607	NCB31CK-473	CER.CAPACITOR	0.047	16V
C610	NCB31CK-473	CER.CAPACITOR	0.047	16V
C611	NCB31CK-473	CER.CAPACITOR	0.047	16V
C613	NCB31CK-473	CER.CAPACITOR	0.047	16V
C614	NCB31CK-473	CER.CAPACITOR	0.047	16V
C615	NCB31CK-473	CER.CAPACITOR	0.047	16V
C617	NCB31CK-473	CER.CAPACITOR	0.047	16V
C618	NCB31CK-473	CER.CAPACITOR	0.047	16V
C619	NCB31CK-473	CER.CAPACITOR	0.047	16V
C620	NCB31CK-473	CER.CAPACITOR	0.047	16V
C621	NCB31CK-473	CER.CAPACITOR	0.047	16V
C622	NCB31CK-473	CER.CAPACITOR	0.047	16V
C623	NCB31CK-473	CER.CAPACITOR	0.047	16V
C624	NCB31CK-473	CER.CAPACITOR	0.047	16V
C625	NCT06CH-7R0	CER.CAPACITOR	7.0P	50V
C626	NCT06CH-331	CER.CAPACITOR	330P	50V
L1	SCV2662-027	FERRITE BEADS		
L2	SCV2662-027	FERRITE BEADS		
L401	SCV2662-027	FERRITE BEADS		
L402	SCV2662-027	FERRITE BEADS		
L403	SCV2662-027	FERRITE BEADS		
L404	SCV2662-027	FERRITE BEADS		
L405	SCV1950-3R9	PEAKING COIL	3.9 μ H	
L501	SCV2662-027	FERRITE BEADS		
L502	SCV2662-027	FERRITE BEADS		
L503	SCV2662-027	FERRITE BEADS		
L504	SCV2662-027	FERRITE BEADS		
L505	SCV1950-3R9	PEAKING COIL	3.9 μ H	
L601	SCV2662-027	FERRITE BEADS		
L602	SCV2662-027	FERRITE BEADS		
L603	SCV2662-027	FERRITE BEADS		
L604	SCV2662-027	FERRITE BEADS		
L605	SCV1950-3R9	PEAKING COIL	3.9 μ H	
DL401	SCV2635-001	LPF	14.3MHz TRAP	
DL501	SCV2635-001	LPF	14.3MHz TRAP	
DL601	SCV2635-001	LPF	14.3MHz TRAP	
CN3	CHB102W-24R	CONNECTOR	24-PIN	
CN4	CHB102W-14R	CONNECTOR	14-PIN	
CN23	SCV1770-004	CONNECTOR	4-PIN	
CN24	SCV1770-004	CONNECTOR	4-PIN	
CN25	SCV1770-004	CONNECTOR	4-PIN	
TP401	SCV1880-001	TEST POINT	LP B	
TP402	SCV1880-001	TEST POINT	GAMMA IN B	
TP403	SCV1880-001	TEST POINT	GAMMA OUT B	
TP501	SCV1880-001	TEST POINT	LP G	

5.6 CE BOARD ASSEMBLY LIST 06

SCK2443-02-P0B

06

Symbol No.	Part No.	Part Name	Description
TP502	SCV1880-001	TEST POINT	GAMMA IN G
TP503	SCV1880-001	TEST POINT	GAMMA OUT G
TP601	SCV1880-001	TEST POINT	LP R
TP602	SCV1880-001	TEST POINT	GAMMA IN R
TP603	SCV1880-001	TEST POINT	GAMMA OUT R

Symbol No.	Part No.	Part Name	Description
IC1	TC7S04F	I.C.(M)	TOSHIBA
IC2	TC7S04F	I.C.(M)	TOSHIBA
IC401	AD8011AR	I.C.(M)	ANALOG DEVICES
IC402	MC74HC4053F	I.C.(M)	MOTOROLA
IC501	AD8011AR	I.C.(M)	ANALOG DEVICES
IC502	TK16031MTL	I.C.(M)	TOKO DENSI
IC503	AD8011AR	I.C.(M)	ANALOG DEVICES
IC504	LMC6082IM	I.C.(M)	NATIONAL SEMICO
IC505	TC4S66F	I.C.(M)	TOSHIBA
IC506	TC4S66F	I.C.(M)	TOSHIBA
IC601	AD8011AR	I.C.(M)	ANALOG DEVICES
IC701	LMC6082IM	I.C.(M)	NATIONAL SEMICO
IC702	TC4S66F	I.C.(M)	TOSHIBA
IC703	AD8011AR	I.C.(M)	ANALOG DEVICES
IC704	TC4S66F	I.C.(M)	TOSHIBA
IC705	LMC6082IM	I.C.(M)	NATIONAL SEMICO
IC706	TC4S66F	I.C.(M)	TOSHIBA
IC801	AD8011AR	I.C.(M)	ANALOG DEVICES
IC802	AD8011AR	I.C.(M)	ANALOG DEVICES
IC803	NJM5532M	I.C.(M)	JRC
IC804	AD8011AR	I.C.(M)	ANALOG DEVICES
IC805	MLT04GS	I.C.(M)	ANALOG DEVICES
IC806	AD8011AR	I.C.(M)	ANALOG DEVICES
IC807	MC14052BF	I.C.(M)	MOTOROLA
IC808	MC14052BF	I.C.(M)	MOTOROLA
IC809	AD8002AR	I.C.(M)	ANALOG DEVICES
IC810	AD8002AR	I.C.(M)	ANALOG DEVICES
Q1	2SA1790(BC)	TRANSISTOR	MATSUSHITA
Q2	2SC4626(BC)	TRANSISTOR	MATSUSHITA
Q3	3SK157	F.E.T.	NEC
Q4	3SK157	F.E.T.	NEC
Q5	2SA1790(BC)	TRANSISTOR	MATSUSHITA
Q6	DTC124EU	TRANSISTOR	ROHM
Q401	2SA1790(BC)	TRANSISTOR	MATSUSHITA
Q402	2SC4626(BC)	TRANSISTOR	MATSUSHITA
Q403	3SK157	F.E.T.	NEC
Q404	2SA1790(BC)	TRANSISTOR	MATSUSHITA
Q405	2SA1790(BC)	TRANSISTOR	MATSUSHITA
Q406	2SC4626(BC)	TRANSISTOR	MATSUSHITA
Q407	2SC4626(BC)	TRANSISTOR	MATSUSHITA
Q501	2SA1790(BC)	TRANSISTOR	MATSUSHITA
Q502	2SC4626(BC)	TRANSISTOR	MATSUSHITA
Q503	3SK157	F.E.T.	NEC
Q504	2SA1790(BC)	TRANSISTOR	MATSUSHITA
Q505	2SA1790(BC)	TRANSISTOR	MATSUSHITA
Q506	2SC4626(BC)	TRANSISTOR	MATSUSHITA
Q507	2SC4626(BC)	TRANSISTOR	MATSUSHITA
Q508	2SC4626(BC)	TRANSISTOR	MATSUSHITA
Q510	2SJ163(Q.R)	F.E.T.	MATSUSHITA
Q601	2SA1790(BC)	TRANSISTOR	MATSUSHITA
Q602	2SC4626(BC)	TRANSISTOR	MATSUSHITA
Q603	3SK157	F.E.T.	NEC
Q604	2SA1790(BC)	TRANSISTOR	MATSUSHITA
Q605	2SA1790(BC)	TRANSISTOR	MATSUSHITA
Q606	2SC4626(BC)	TRANSISTOR	MATSUSHITA
Q607	2SC4626(BC)	TRANSISTOR	MATSUSHITA
Q702	2SC4626(BC)	TRANSISTOR	MATSUSHITA
Q703	2SC4626(BC)	TRANSISTOR	MATSUSHITA

[CE]

Symbol No.	Part No.	Part Name	Description
Q704	2SJ163(Q.R)	F.E.T.	MATSUSHITA
Q705	2SK374(Q.R)	F.E.T.	MATSUSHITA
Q706	2SC4626(BC)	TRANSISTOR	MATSUSHITA
Q707	2SA1790(BC)	TRANSISTOR	MATSUSHITA
Q708	2SA1790(BC)	TRANSISTOR	MATSUSHITA
Q709	2SC4626(BC)	TRANSISTOR	MATSUSHITA
Q710	2SA1790(BC)	TRANSISTOR	MATSUSHITA
Q711	2SA1790(BC)	TRANSISTOR	MATSUSHITA
Q712	2SC4626(BC)	TRANSISTOR	MATSUSHITA
Q713	2SA1790(BC)	TRANSISTOR	MATSUSHITA
Q714	2SA1790(BC)	TRANSISTOR	MATSUSHITA
Q715	2SC4626(BC)	TRANSISTOR	MATSUSHITA
Q716	2SC4626(BC)	TRANSISTOR	MATSUSHITA
Q717	2SC4626(BC)	TRANSISTOR	MATSUSHITA
Q718	2SK374(Q.R)	F.E.T.	MATSUSHITA
Q720	2SJ163(Q.R)	F.E.T.	MATSUSHITA
Q721	2SJ163(Q.R)	F.E.T.	MATSUSHITA
Q722	2SC4626(BC)	TRANSISTOR	MATSUSHITA
Q723	2SA1790(BC)	TRANSISTOR	MATSUSHITA
Q801	2SA1790(BC)	TRANSISTOR	MATSUSHITA
Q802	2SC4626(BC)	TRANSISTOR	MATSUSHITA
D1	MA143A	DIODE	MATSUSHITA
D701	MA143A	DIODE	MATSUSHITA
D702	MA742	DIODE	MATSUSHITA
R1	NRVA63D-223	M.F.RESISTOR	22K 1/16W
R2	NRVA63D-223	M.F.RESISTOR	22K 1/16W
R3	NRVA63D-223	M.F.RESISTOR	22K 1/16W
R4	NRVA63D-223	M.F.RESISTOR	22K 1/16W
R5	NRVA63D-473	M.F.RESISTOR	47K 1/16W
R6	NRVA63D-473	M.F.RESISTOR	47K 1/16W
R7	NRVA63D-473	M.F.RESISTOR	47K 1/16W
R8	NRVA63D-472	M.F.RESISTOR	4.7K 1/16W
R9	NRVA63D-123	M.F.RESISTOR	12K 1/16W
R10	NRVA63D-153	M.F.RESISTOR	15K 1/16W
R11	NRVA63D-103	M.F.RESISTOR	10K 1/16W
R12	NRVA63D-153	M.F.RESISTOR	15K 1/16W
R13	NRVA63D-821	M.F.RESISTOR	820 1/16W
R14	NRVA63D-152	M.F.RESISTOR	1.5K 1/16W
R15	NRVA63D-472	M.F.RESISTOR	4.7K 1/16W
R16	NRVA63D-104	M.F.RESISTOR	100K 1/16W
R17	NRVA63D-273	M.F.RESISTOR	27K 1/16W
R18	NRVA63D-100	M.F.RESISTOR	10 1/16W
R19	NRSA63J-105	M.G.RESISTOR	1.0M 1/16W
R20	NRVA63D-102	M.F.RESISTOR	1.0K 1/16W
R21	NRVA63D-102	M.F.RESISTOR	1.0K 1/16W
R22	NRVA63D-912	M.F.RESISTOR	9.1K 1/16W
R23	NRVA63D-822	M.F.RESISTOR	8.2K 1/16W
R24	NRVA63D-103	M.F.RESISTOR	10K 1/16W
R25	NRVA63D-101	M.F.RESISTOR	100 1/16W
R26	NRVA63D-101	M.F.RESISTOR	100 1/16W
R27	NRVA63D-154	M.F.RESISTOR	150K 1/16W
R28	NRVA63D-562	M.F.RESISTOR	5.6K 1/16W
R29	NRVA63D-123	M.F.RESISTOR	12K 1/16W
R30	NRVA63D-222	M.F.RESISTOR	2.2K 1/16W
R31	NRVA63D-562	M.F.RESISTOR	5.6K 1/16W
R32	NRVA63D-103	M.F.RESISTOR	10K 1/16W

Symbol No.	Part No.	Part Name	Description
R33	NRVA63D-473	M.F.RESISTOR	47K 1/16W
R40	NRVA63D-104	M.F.RESISTOR	100K 1/16W
R401	NRVA63D-102	M.F.RESISTOR	1.0K 1/16W
R402	NRVA63D-102	M.F.RESISTOR	1.0K 1/16W
R403	NRVA63D-152	M.F.RESISTOR	1.5K 1/16W
R404	NRVA63D-101	M.F.RESISTOR	100 1/16W
R405	NRVA63D-152	M.F.RESISTOR	1.5K 1/16W
R406	NRVA63D-272	M.F.RESISTOR	2.7K 1/16W
R407	NRVA63D-272	M.F.RESISTOR	2.7K 1/16W
R408	NRVA63D-272	M.F.RESISTOR	2.7K 1/16W
R409	NRVA63D-272	M.F.RESISTOR	2.7K 1/16W
R410	NRVA63D-272	M.F.RESISTOR	2.7K 1/16W
R412	NRVA63D-272	M.F.RESISTOR	2.7K 1/16W
R413	NRVA63D-152	M.F.RESISTOR	1.5K 1/16W
R414	NRVA63D-102	M.F.RESISTOR	1.0K 1/16W
R415	NRVA63D-222	M.F.RESISTOR	2.2K 1/16W
R434	NRVA63D-101	M.F.RESISTOR	100 1/16W
R501	NRVA63D-102	M.F.RESISTOR	1.0K 1/16W
R502	NRVA63D-102	M.F.RESISTOR	1.0K 1/16W
R503	NRVA63D-152	M.F.RESISTOR	1.5K 1/16W
R504	NRVA63D-101	M.F.RESISTOR	100 1/16W
R505	NRVA63D-152	M.F.RESISTOR	1.5K 1/16W
R506	NRVA63D-272	M.F.RESISTOR	2.7K 1/16W
R507	NRVA63D-272	M.F.RESISTOR	2.7K 1/16W
R508	NRVA63D-272	M.F.RESISTOR	2.7K 1/16W
R509	NRVA63D-272	M.F.RESISTOR	2.7K 1/16W
R510	NRVA63D-272	M.F.RESISTOR	2.7K 1/16W
R512	NRVA63D-272	M.F.RESISTOR	2.7K 1/16W
R513	NRVA63D-152	M.F.RESISTOR	1.5K 1/16W
R514	NRVA63D-102	M.F.RESISTOR	1.0K 1/16W
R515	NRVA63D-183	M.F.RESISTOR	18K 1/16W
R516	NRSA63J-0R0	M.G.RESISTOR	0 1/16W
R518	NRVA63D-393	M.F.RESISTOR	39K 1/16W
R519	NRVA63D-393	M.F.RESISTOR	39K 1/16W
R520	NRVA63D-103	M.F.RESISTOR	10K 1/16W
R521	NRVA63D-102	M.F.RESISTOR	1.0K 1/16W
R522	NRVA63D-222	M.F.RESISTOR	2.2K 1/16W
R523	NRVA63D-822	M.F.RESISTOR	8.2K 1/16W
R524	NRVA63D-332	M.F.RESISTOR	3.3K 1/16W
R525	NRVA63D-223	M.F.RESISTOR	22K 1/16W
R526	NRVA63D-391	M.F.RESISTOR	390 1/16W
R527	NRVA63D-222	M.F.RESISTOR	2.2K 1/16W
R528	NRVA63D-561	M.F.RESISTOR	560 1/16W
R529	NRVA63D-132	M.F.RESISTOR	1.3K 1/16W
R530	NRVA63D-472	M.F.RESISTOR	4.7K 1/16W
R531	NRVA63D-102	M.F.RESISTOR	1.0K 1/16W
R532	NRVA63D-222	M.F.RESISTOR	2.2K 1/16W
R533	NRVA63D-100	M.F.RESISTOR	10 1/16W
R534	NRVA63D-101	M.F.RESISTOR	100 1/16W
R535	NRVA63D-222	M.F.RESISTOR	2.2K 1/16W
R601	NRVA63D-102	M.F.RESISTOR	1.0K 1/16W
R602	NRVA63D-102	M.F.RESISTOR	1.0K 1/16W
R603	NRVA63D-152	M.F.RESISTOR	1.5K 1/16W
R604	NRVA63D-101	M.F.RESISTOR	100 1/16W
R605	NRVA63D-152	M.F.RESISTOR	1.5K 1/16W
R606	NRVA63D-272	M.F.RESISTOR	2.7K 1/16W
R607	NRVA63D-272	M.F.RESISTOR	2.7K 1/16W
R608	NRVA63D-272	M.F.RESISTOR	2.7K 1/16W
R609	NRVA63D-272	M.F.RESISTOR	2.7K 1/16W

Symbol No.	Part No.	Part Name	Description	
R610	NRVA63D-272	M.F.RESISTOR	2.7K	1/16W
R612	NRVA63D-272	M.F.RESISTOR	2.7K	1/16W
R613	NRVA63D-152	M.F.RESISTOR	1.5K	1/16W
R614	NRVA63D-102	M.F.RESISTOR	1.0K	1/16W
R615	NRVA63D-222	M.F.RESISTOR	2.2K	1/16W
R634	NRVA63D-101	M.F.RESISTOR	100	1/16W
R701	NRVA63D-102	M.F.RESISTOR	1.0K	1/16W
R702	NRVA63D-122	M.F.RESISTOR	1.2K	1/16W
R703	NRSA63J-OR0	M.G.RESISTOR	0	1/16W
R704	NRVA63D-682	M.F.RESISTOR	6.8K	1/16W
R706	NRSA63J-OR0	M.G.RESISTOR	0	1/16W
R707	NRVA63D-563	M.F.RESISTOR	56K	1/16W
R708	NRVA63D-472	M.F.RESISTOR	4.7K	1/16W
R709	NRVA63D-181	M.F.RESISTOR	180	1/16W
R710	NRVA63D-122	M.F.RESISTOR	1.2K	1/16W
R711	NRVA63D-472	M.F.RESISTOR	4.7K	1/16W
R712	NRVA63D-332	M.F.RESISTOR	3.3K	1/16W
R713	NRVA63D-221	M.F.RESISTOR	220	1/16W
R714	NRVA63D-392	M.F.RESISTOR	3.9K	1/16W
R715	NRVA63D-332	M.F.RESISTOR	3.3K	1/16W
R716	NRVA63D-182	M.F.RESISTOR	1.8K	1/16W
R717	NRVA63D-103	M.F.RESISTOR	10K	1/16W
R718	NRVA63D-822	M.F.RESISTOR	8.2K	1/16W
R719	NRVA63D-222	M.F.RESISTOR	2.2K	1/16W
R720	NRVA63D-222	M.F.RESISTOR	2.2K	1/16W
R721	NRVA63D-102	M.F.RESISTOR	1.0K	1/16W
R722	NRVA63D-102	M.F.RESISTOR	1.0K	1/16W
R723	NRVA63D-561	M.F.RESISTOR	560	1/16W
R724	NRVA63D-561	M.F.RESISTOR	560	1/16W
R725	NRVA63D-222	M.F.RESISTOR	2.2K	1/16W
R726	NRVA63D-152	M.F.RESISTOR	1.5K	1/16W
R727	NRVA63D-392	M.F.RESISTOR	3.9K	1/16W
R728	NRVA63D-222	M.F.RESISTOR	2.2K	1/16W
R729	NRVA63D-222	M.F.RESISTOR	2.2K	1/16W
R730	NRVA63D-152	M.F.RESISTOR	1.5K	1/16W
R731	NRVA63D-392	M.F.RESISTOR	3.9K	1/16W
R732	NRVA63D-222	M.F.RESISTOR	2.2K	1/16W
R733	NRVA63D-222	M.F.RESISTOR	2.2K	1/16W
R734	NRVA63D-122	M.F.RESISTOR	1.2K	1/16W
R736	NRVA63D-563	M.F.RESISTOR	56K	1/16W
R737	NRVA63D-222	M.F.RESISTOR	2.2K	1/16W
R738	NRVA63D-272	M.F.RESISTOR	2.7K	1/16W
R739	NRVA63D-392	M.F.RESISTOR	3.9K	1/16W
R740	NRVA63D-102	M.F.RESISTOR	1.0K	1/16W
R741	NRVA63D-222	M.F.RESISTOR	2.2K	1/16W
R742	NRVA63D-332	M.F.RESISTOR	3.3K	1/16W
R745	NRVA63D-123	M.F.RESISTOR	12K	1/16W
R746	NRVA63D-123	M.F.RESISTOR	12K	1/16W
R747	NRVA63D-152	M.F.RESISTOR	1.5K	1/16W
R748	NRVA63D-152	M.F.RESISTOR	1.5K	1/16W
R749	NRVA63D-132	M.F.RESISTOR	1.3K	1/16W
R750	NRVA63D-132	M.F.RESISTOR	1.3K	1/16W
R751	NRVA63D-681	M.F.RESISTOR	680	1/16W
R752	NRVA63D-392	M.F.RESISTOR	3.9K	1/16W
R753	NRVA63D-393	M.F.RESISTOR	39K	1/16W
R754	NRVA63D-102	M.F.RESISTOR	1.0K	1/16W
R755	NRVA63D-473	M.F.RESISTOR	47K	1/16W
R756	NRVA63D-473	M.F.RESISTOR	47K	1/16W
R757	NRVA63D-272	M.F.RESISTOR	2.7K	1/16W

Symbol No.	Part No.	Part Name	Description	
R758	NRVA63D-272	M.F.RESISTOR	2.7K	1/16W
R759	NRVA63D-102	M.F.RESISTOR	1.0K	1/16W
R762	NRVA63D-104	M.F.RESISTOR	100K	1/16W
R763	NRVA63D-103	M.F.RESISTOR	10K	1/16W
R764	NRVA63D-221	M.F.RESISTOR	220	1/16W
R765	NRVA63D-561	M.F.RESISTOR	560	1/16W
R767	NRVA63D-333	M.F.RESISTOR	33K	1/16W
R768	NRVA63D-272	M.F.RESISTOR	2.7K	1/16W
R769	NRVA63D-183	M.F.RESISTOR	18K	1/16W
R770	NRVA63D-823	M.F.RESISTOR	82K	1/16W
R771	NRVA63D-823	M.F.RESISTOR	82K	1/16W
R772	NRVA63D-102	M.F.RESISTOR	1.0K	1/16W
R773	NRSA63J-OR0	M.G.RESISTOR	0	1/16W
R774	NRSA63J-105	M.G.RESISTOR	1.0M	1/16W
R801	NRVA63D-273	M.F.RESISTOR	27K	1/16W
R802	NRVA63D-472	M.F.RESISTOR	4.7K	1/16W
R805	NRVA63D-562	M.F.RESISTOR	5.6K	1/16W
R806	NRVA63D-122	M.F.RESISTOR	1.2K	1/16W
R807	NRVA63D-822	M.F.RESISTOR	8.2K	1/16W
R808	NRVA63D-152	M.F.RESISTOR	1.5K	1/16W
R809	NRVA63D-561	M.F.RESISTOR	560	1/16W
R810	NRVA63D-104	M.F.RESISTOR	100K	1/16W
R811	NRVA63D-102	M.F.RESISTOR	1.0K	1/16W
R812	NRVA63D-332	M.F.RESISTOR	3.3K	1/16W
R813	NRVA63D-391	M.F.RESISTOR	390	1/16W
R814	NRVA63D-102	M.F.RESISTOR	1.0K	1/16W
R816	NRVA63D-102	M.F.RESISTOR	1.0K	1/16W
R817	NRVA63D-102	M.F.RESISTOR	1.0K	1/16W
R818	NRVA63D-102	M.F.RESISTOR	1.0K	1/16W
R819	NRVA63D-471	M.F.RESISTOR	470	1/16W
R820	NRVA63D-102	M.F.RESISTOR	1.0K	1/16W
R821	NRVA63D-102	M.F.RESISTOR	1.0K	1/16W
R822	NRVA63D-471	M.F.RESISTOR	470	1/16W
R823	NRVA63D-471	M.F.RESISTOR	470	1/16W
R824	NRVA63D-122	M.F.RESISTOR	1.2K	1/16W
R825	NRVA63D-183	M.F.RESISTOR	18K	1/16W
R827	NRVA63D-222	M.F.RESISTOR	2.2K	1/16W
R828	NRVA63D-152	M.F.RESISTOR	1.5K	1/16W
R829	NRVA63D-222	M.F.RESISTOR	2.2K	1/16W
R830	NRVA63D-223	M.F.RESISTOR	22K	1/16W
R831	NRVA63D-102	M.F.RESISTOR	1.0K	1/16W
R832	NRVA63D-124	M.F.RESISTOR	120K	1/16W
R833	NRVA63D-104	M.F.RESISTOR	100K	1/16W
R834	NRVA63D-152	M.F.RESISTOR	1.5K	1/16W
R835	NRVA63D-392	M.F.RESISTOR	3.9K	1/16W
R836	NRVA63D-102	M.F.RESISTOR	1.0K	1/16W
R837	NRVA63D-102	M.F.RESISTOR	1.0K	1/16W
R838	NRVA63D-822	M.F.RESISTOR	8.2K	1/16W
R839	NRVA63D-562	M.F.RESISTOR	5.6K	1/16W
R840	NRVA63D-112	M.F.RESISTOR	1.1K	1/16W
R841	NRVA63D-152	M.F.RESISTOR	1.5K	1/16W
R842	NRVA63D-222	M.F.RESISTOR	2.2K	1/16W
R843	NRVA63D-104	M.F.RESISTOR	100K	1/16W
R844	NRVA63D-472	M.F.RESISTOR	4.7K	1/16W
R845	NRVA63D-152	M.F.RESISTOR	1.5K	1/16W
R846	NRVA63D-222	M.F.RESISTOR	2.2K	1/16W
R847	NRVA63D-223	M.F.RESISTOR	22K	1/16W
R848	NRVA63D-102	M.F.RESISTOR	1.0K	1/16W
R849	NRVA63D-224	M.F.RESISTOR	220K	1/16W
R850	NRVA63D-152	M.F.RESISTOR	1.5K	1/16W

[CE]

Symbol No.	Part No.	Part Name	Description
R851	NRVA63D-392	M.F.RESISTOR	3.9K 1/16W
R852	NRVA63D-472	M.F.RESISTOR	4.7K 1/16W
R853	NRVA63D-182	M.F.RESISTOR	1.8K 1/16W
R854	NRVA63D-102	M.F.RESISTOR	1.0K 1/16W
R855	NRVA63D-104	M.F.RESISTOR	100K 1/16W
R856	NRVA63D-183	M.F.RESISTOR	18K 1/16W
R857	NRVA63D-112	M.F.RESISTOR	1.1K 1/16W
R858	NRVA63D-122	M.F.RESISTOR	1.2K 1/16W
R859	NRVA63D-472	M.F.RESISTOR	4.7K 1/16W
R860	NRVA63D-472	M.F.RESISTOR	4.7K 1/16W
R861	NRVA63D-122	M.F.RESISTOR	1.2K 1/16W
R862	NRVA63D-122	M.F.RESISTOR	1.2K 1/16W
R863	NRVA63D-272	M.F.RESISTOR	2.7K 1/16W
R864	NRVA63D-272	M.F.RESISTOR	2.7K 1/16W
R865	NRVA63D-102	M.F.RESISTOR	1.0K 1/16W
R866	NRVA63D-101	M.F.RESISTOR	100 1/16W
R867	NRVA63D-152	M.F.RESISTOR	1.5K 1/16W
R868	NRVA63D-473	M.F.RESISTOR	47K 1/16W
R869	NRVA63D-473	M.F.RESISTOR	47K 1/16W
R870	NRSA63J-0R0	M.G.RESISTOR	0 1/16W
R871	NRVA63D-102	M.F.RESISTOR	1.0K 1/16W
R872	NRVA63D-102	M.F.RESISTOR	1.0K 1/16W
R873	NRSA63J-0R0	M.G.RESISTOR	0 1/16W
R874	NRVA63D-102	M.F.RESISTOR	1.0K 1/16W
R875	NRVA63D-102	M.F.RESISTOR	1.0K 1/16W
R876	NRSA63J-0R0	M.G.RESISTOR	0 1/16W
R877	NRVA63D-102	M.F.RESISTOR	1.0K 1/16W
R878	NRVA63D-102	M.F.RESISTOR	1.0K 1/16W
R879	NRVA63D-122	M.F.RESISTOR	1.2K 1/16W
R880	NRSA63J-0R0	M.G.RESISTOR	0 1/16W
R881	NRVA63D-223	M.F.RESISTOR	22K 1/16W
R882	NRVA63D-472	M.F.RESISTOR	4.7K 1/16W
R884	NRVA63D-100	M.F.RESISTOR	10 1/16W
R885	NRSA63J-6R8	M.G.RESISTOR	6.8 1/16W
R886	NRVA63D-100	M.F.RESISTOR	10 1/16W
R887	NRVA63D-151	M.F.RESISTOR	150 1/16W
R888	NRVA63D-151	M.F.RESISTOR	150 1/16W
R889	NRVA63D-121	M.F.RESISTOR	120 1/16W
R890	NRVA63D-331	M.F.RESISTOR	330 1/16W
R891	NRSA63J-6R8	M.G.RESISTOR	6.8 1/16W
R892	NRVA63D-100	M.F.RESISTOR	10 1/16W
R893	NRSA63J-6R8	M.G.RESISTOR	6.8 1/16W
R894	NRSA63J-0R0	M.G.RESISTOR	0 1/16W
R897	NRVA63D-151	M.F.RESISTOR	150 1/16W
R898	NRVA63D-221	M.F.RESISTOR	220 1/16W
R899	NRVA63D-152	M.F.RESISTOR	1.5K 1/16W
R900	NRVA63D-181	M.F.RESISTOR	180 1/16W
R901	NRVA63D-181	M.F.RESISTOR	180 1/16W
R902	NRVA63D-393	M.F.RESISTOR	39K 1/16W
R903	NRVA63D-331	M.F.RESISTOR	330 1/16W
VR801	NVP1313-102	TRIM.RESISTOR	1K C.LEVEL
C1	NEH90JM-107	E.CAPACITOR	100 6.3V
C2	NEH90JM-107	E.CAPACITOR	100 6.3V
C3	NCB31CK-473	CER.CAPACITOR	0.047 16V
C4	NCB31CK-473	CER.CAPACITOR	0.047 16V
C5	NCB31CK-473	CER.CAPACITOR	0.047 16V
C6	NCB31CK-473	CER.CAPACITOR	0.047 16V

Symbol No.	Part No.	Part Name	Description
C7	NCB31CK-473	CER.CAPACITOR	0.047 16V
C8	NCB31CK-473	CER.CAPACITOR	0.047 16V
C10	NCB31CK-473	CER.CAPACITOR	0.047 16V
C11	NCB31CK-473	CER.CAPACITOR	0.047 16V
C12	NCT06CH-180	CER.CAPACITOR	18P 50V
C13	NCT06CH-101	CER.CAPACITOR	100P 50V
C14	NCT06CH-2R0	CER.CAPACITOR	2.0P 50V
C32	NCT06CH-271	CER.CAPACITOR	270P 50V
C401	NCB31CK-473	CER.CAPACITOR	0.047 16V
C402	NCB31CK-473	CER.CAPACITOR	0.047 16V
C403	NCT06CH-331	CER.CAPACITOR	330P 50V
C501	NCB31CK-473	CER.CAPACITOR	0.047 16V
C502	NCB31CK-473	CER.CAPACITOR	0.047 16V
C503	NEE51EM-105	TAN.CAPACITOR	1.0 25V
C504	NCB31CK-473	CER.CAPACITOR	0.047 16V
C505	NEE50GM-476	TAN.CAPACITOR	47 4V
C506	NEE51EM-105	TAN.CAPACITOR	1.0 25V
C507	NCB31CK-473	CER.CAPACITOR	0.047 16V
C508	NCB31CK-473	CER.CAPACITOR	0.047 16V
C509	NCB31CK-473	CER.CAPACITOR	0.047 16V
C510	NCB31CK-473	CER.CAPACITOR	0.047 16V
C511	NCB31CK-473	CER.CAPACITOR	0.047 16V
C512	NCB31CK-473	CER.CAPACITOR	0.047 16V
C513	NCT06CH-331	CER.CAPACITOR	330P 50V
C601	NCB31CK-473	CER.CAPACITOR	0.047 16V
C602	NCB31CK-473	CER.CAPACITOR	0.047 16V
C603	NCT06CH-331	CER.CAPACITOR	330P 50V
C701	NEE50GM-476	TAN.CAPACITOR	47 4V
C704	NCT03CH-102	CER.CAPACITOR	1000P 50V
C705	NCT06CH-390	CER.CAPACITOR	39P 50V
C706	NCT06CH-150	CER.CAPACITOR	15P 50V
C707	NCT06CH-390	CER.CAPACITOR	39P 50V
C708	NCT06CH-150	CER.CAPACITOR	15P 50V
C709	NEE51EM-105	TAN.CAPACITOR	1.0 25V
C710	NCB31CK-473	CER.CAPACITOR	0.047 16V
C711	NCB31CK-473	CER.CAPACITOR	0.047 16V
C712	NEE50GM-476	TAN.CAPACITOR	47 4V
C713	NEE50GM-476	TAN.CAPACITOR	47 4V
C714	NCB31CK-473	CER.CAPACITOR	0.047 16V
C715	NCB31CK-473	CER.CAPACITOR	0.047 16V
C716	NCT06CH-390	CER.CAPACITOR	39P 50V
C801	NCB31CK-473	CER.CAPACITOR	0.047 16V
C802	NCB31CK-473	CER.CAPACITOR	0.047 16V
C805	NCB31CK-473	CER.CAPACITOR	0.047 16V
C806	NCB31CK-473	CER.CAPACITOR	0.047 16V
C807	NCT06CH-150	CER.CAPACITOR	15P 50V
C808	NCT06CH-150	CER.CAPACITOR	15P 50V
C809	NCB31CK-473	CER.CAPACITOR	0.047 16V
C810	NCB31CK-473	CER.CAPACITOR	0.047 16V
C811	NCB31CK-473	CER.CAPACITOR	0.047 16V
C812	NCB31CK-473	CER.CAPACITOR	0.047 16V
C813	NCB31CK-473	CER.CAPACITOR	0.047 16V
C814	NCB31CK-473	CER.CAPACITOR	0.047 16V
C815	NCB31CK-473	CER.CAPACITOR	0.047 16V
C816	NCB31CK-473	CER.CAPACITOR	0.047 16V
C817	NCB31CK-473	CER.CAPACITOR	0.047 16V
C818	NCT06CH-150	CER.CAPACITOR	15P 50V
C819	NCT06CH-150	CER.CAPACITOR	15P 50V
C820	NCB31CK-473	CER.CAPACITOR	0.047 16V

5.7 CP BOARD ASSEMBLY LIST 07

SCK2443-03-00B

07□□□□□□

Symbol No.	Part No.	Part Name	Description
C823	NCB31CK-473	CER.CAPACITOR	0.047 16V
C824	NCB31CK-473	CER.CAPACITOR	0.047 16V
C825	NCB31CK-473	CER.CAPACITOR	0.047 16V
C826	NCB31CK-473	CER.CAPACITOR	0.047 16V
C827	NCB31CK-473	CER.CAPACITOR	0.047 16V
C828	NCB31CK-473	CER.CAPACITOR	0.047 16V
C829	NCB31CK-473	CER.CAPACITOR	0.047 16V
C830	NCB31CK-473	CER.CAPACITOR	0.047 16V
C831	NCT06CH-101	CER.CAPACITOR	100P 50V
L1	SCV2662-027	FERRITE BEADS	
L2	SCV2662-027	FERRITE BEADS	
L501	SCV2662-027	FERRITE BEADS	
L502	SCV2662-027	FERRITE BEADS	
L701	SCV1950-470	PEAKING COIL	47μH
LC801	SCV2597-S144Z	FILTER	
LC802	SCV2597-S144Z	FILTER	
LC803	SCV2597-S144Z	FILTER	
DL401	SCV2517-001Z	DELAY LINE	100nsec
DL501	SCV2517-001Z	DELAY LINE	100nsec
DL601	SCV2517-001Z	DELAY LINE	100nsec
DL702	SCV2528-001Z	DL 150(NSEC)	150nsec
DL801	SCV2528-001Z	DL 150(NSEC)	150nsec
DL802	SCV2528-001Z	DL 150(NSEC)	150nsec
DL803	SCV2638-001	BPF	4.43MHz
CN5	CHB102W-24R	CONNECTOR	24-PIN
CN6	CHB102W-14R	CONNECTOR	14-PIN
CN26	SCV1770-004	CONNECTOR	4-PIN
TP405	SCV1880-001	TEST POINT	OUT B
TP505	SCV1880-001	TEST POINT	OUT G
TP604	SCV1880-001	TEST POINT	PR G
TP605	SCV1880-001	TEST POINT	OUT R
TP701	SCV1880-001	TEST POINT	DELAIED G
TP702	SCV1880-001	TEST POINT	CONTOUR

Symbol No.	Part No.	Part Name	Description
IC901	MB89T715AHPF	I.C.(M)	FUJITSU
IC902	LH5168N-10L	I.C.(M)	SHARP
IC903	NM93C66M8X	I.C.(M)	NATIONAL SEMICO
IC904	MC74HC139AF	I.C.(M)	MOTOROLA
IC905	MC74HC373AF	I.C.(M)	MOTOROLA
IC906	PLSC1148	I.C.(M)	MBM27C512-15
IC907	TC74HC238AF	I.C.(M)	TOSHIBA
IC908	TC74HC04AF	I.C.(M)	TOSHIBA
IC909	TC7S08F	I.C.(M)	TOSHIBA
IC910	S-8054HNCB	I.C.(M)	SEIKO
IC911	MC74HC165F	I.C.(M)	MOTOROLA
IC912	MB89012-109	I.C.(M)	FUJITSU
SK906	SCV2543-A28	IC SOCKET	for IC906
Q901	2SC4626(BC)	TRANSISTOR	MATSUSHITA
Q902	2SC4626(BC)	TRANSISTOR	MATSUSHITA
Q903	DTA124EU	TRANSISTOR	ROHM
D901	MA142A	DIODE	MATSUSHITA
R901	NRVA63D-473	M.F.RESISTOR	47K 1/16W
R902	NRVA63D-473	M.F.RESISTOR	47K 1/16W
R903	NRVA63D-103	M.F.RESISTOR	10K 1/16W
R904	NRVA63D-103	M.F.RESISTOR	10K 1/16W
R906	NRVA63D-682	M.F.RESISTOR	6.8K 1/16W
R907	NRVA63D-101	M.F.RESISTOR	100 1/16W
R909	NRVA63D-102	M.F.RESISTOR	1.0K 1/16W
R910	NRVA63D-332	M.F.RESISTOR	3.3K 1/16W
R911	NRVA63D-473	M.F.RESISTOR	47K 1/16W
R913	NRVA63D-473	M.F.RESISTOR	47K 1/16W
R914	NRVA63D-473	M.F.RESISTOR	47K 1/16W
R915	NRVA63D-221	M.F.RESISTOR	220 1/16W
R917	NRVA63D-103	M.F.RESISTOR	10K 1/16W
R918	NRVA63D-103	M.F.RESISTOR	10K 1/16W
R921	NRVA63D-473	M.F.RESISTOR	47K 1/16W
R922	NRVA63D-473	M.F.RESISTOR	47K 1/16W
R923	NRVA63D-473	M.F.RESISTOR	47K 1/16W
R924	NRVA63D-473	M.F.RESISTOR	47K 1/16W
R925	NRVA63D-473	M.F.RESISTOR	47K 1/16W
R926	NRVA63D-473	M.F.RESISTOR	47K 1/16W
R927	NRVA63D-473	M.F.RESISTOR	47K 1/16W
R928	NRVA63D-473	M.F.RESISTOR	47K 1/16W
R929	NRVA63D-473	M.F.RESISTOR	47K 1/16W
R930	NRVA63D-473	M.F.RESISTOR	47K 1/16W
R932	NRVA63D-101	M.F.RESISTOR	100 1/16W
R933	NRVA63D-101	M.F.RESISTOR	100 1/16W
R934	NRVA63D-101	M.F.RESISTOR	100 1/16W
R935	NRVA63D-101	M.F.RESISTOR	100 1/16W
R936	NRVA63D-101	M.F.RESISTOR	100 1/16W
R937	NRVA63D-101	M.F.RESISTOR	100 1/16W
R938	NRVA63D-101	M.F.RESISTOR	100 1/16W
R940	NRVA63D-101	M.F.RESISTOR	100 1/16W
R941	NRVA63D-101	M.F.RESISTOR	100 1/16W
R942	NRVA63D-101	M.F.RESISTOR	100 1/16W
R943	NRVA63D-101	M.F.RESISTOR	100 1/16W
R944	NRVA63D-101	M.F.RESISTOR	100 1/16W
R945	NRVA63D-101	M.F.RESISTOR	100 1/16W
R946	NRVA63D-101	M.F.RESISTOR	100 1/16W
R947	NRVA63D-101	M.F.RESISTOR	100 1/16W

[CP]

5.8 DT BOARD ASSEMBLY LIST 08

SCK2443-04-00B

08

Symbol No.	Part No.	Part Name	Description
R948	NRVA63D-101	M.F.RESISTOR	100 1/16W
R949	NRVA63D-101	M.F.RESISTOR	100 1/16W
R950	NRVA63D-101	M.F.RESISTOR	100 1/16W
R960	NRVA63D-473	M.F.RESISTOR	47K 1/16W
VR901	NVP1415-103	TRIM.RESISTOR	10K ADJ.VR
C901	QEZ0171-224	E.CAPACITOR	0.22
C902	NCT06CH-151	CER.CAPACITOR	150P 50V
C903	NCT06CH-181	CER.CAPACITOR	180P 50V
C906	NCB31CK-473	CER.CAPACITOR	0.047 16V
C907	NCB31CK-473	CER.CAPACITOR	0.047 16V
C911	NEE51AM-476	TAN.CAPACITOR	47 10V
C912	NEE51AM-476	TAN.CAPACITOR	47 10V
C913	NFV41HJ-104	F.CAPACITOR	0.10 50V
C914	NEF11AM-225	TAN.CAPACITOR	2.2 10V
C915	NFV41HJ-104	F.CAPACITOR	0.10 50V
C916	NEE51AM-476	TAN.CAPACITOR	47 10V
C917	NCB31CK-473	CER.CAPACITOR	0.047 16V
C918	NCB31CK-473	CER.CAPACITOR	0.047 16V
C919	NCB31CK-473	CER.CAPACITOR	0.047 16V
C920	NCB31CK-473	CER.CAPACITOR	0.047 16V
C921	NCB31CK-473	CER.CAPACITOR	0.047 16V
C922	NCB31CK-473	CER.CAPACITOR	0.047 16V
C923	NFV41HJ-104	F.CAPACITOR	0.10 50V
C924	NCB31CK-473	CER.CAPACITOR	0.047 16V
C925	NCB31CK-473	CER.CAPACITOR	0.047 16V
C926	NCB31CK-473	CER.CAPACITOR	0.047 16V
C927	NCB31CK-473	CER.CAPACITOR	0.047 16V
L901	SCV1950-4R7	PEAKING COIL	4.7μH
X901	SCV2614-001	CRYSTAL	11.059MHz
S901	SCV2247-004	SWITCH	
S902	SCV2588-106	ROTARY SWITCH	ADJ.SW
S903	SCV2162-001	SWITCH	ADJ.SET
CN7	CHB102W-24R	CONNECTOR	24-PIN
CN8	CHB102W-14R	CONNECTOR	14-PIN
TP901	SCV1880-001	TEST POINT	GND
TP902	SCV1880-001	TEST POINT	R-C
TP903	SCV1880-001	TEST POINT	C-R
TP904	SCV1880-001	TEST POINT	RESET

Symbol No.	Part No.	Part Name	Description
IC921	MB89012-109	I.C.(M)	FUJITSU
IC922	LMC6082IM	I.C.(M)	NATIONAL SEMICO
IC923	LMC6082IM	I.C.(M)	NATIONAL SEMICO
IC924	MC74HC4052F	I.C.(M)	MOTOROLA
IC925	NJM062M	I.C.(M)	JRC
IC926	TC4W53F	I.C.(M)	TOSHIBA
IC927	MC74HC02AF	I.C.(M)	MOTOROLA
IC928	NJM062M	I.C.(M)	JRC
IC929	NJM062M	I.C.(M)	JRC
IC930	NJM062M	I.C.(M)	JRC
IC931	TC4S66F	I.C.(M)	TOSHIBA
IC932	NJM062M	I.C.(M)	JRC
IC933	NJM062M	I.C.(M)	JRC
IC934	NJM062M	I.C.(M)	JRC
IC939	TC7S00F	I.C.(M)	TOSHIBA
IC940	TC4S66F	I.C.(M)	TOSHIBA
IC941	TC4S66F	I.C.(M)	TOSHIBA
IC943	TC4S66F	I.C.(M)	TOSHIBA
D911	MA742	DIODE	MATSUSHITA
D912	MA742	DIODE	MATSUSHITA
D913	MA742	DIODE	MATSUSHITA
D914	MA742	DIODE	MATSUSHITA
D915	MA742	DIODE	MATSUSHITA
D916	MA742	DIODE	MATSUSHITA
R2	NRVA63D-184	M.F.RESISTOR	180K 1/16W
R6	NRVA63D-123	M.F.RESISTOR	12K 1/16W
R7	NRVA63D-123	M.F.RESISTOR	12K 1/16W
R953	NRVA63D-103	M.F.RESISTOR	10K 1/16W
R954	NRVA63D-332	M.F.RESISTOR	3.3K 1/16W
R956	NRSA63J-0R0	M.G.RESISTOR	0 1/16W
R957	NRVA63D-103	M.F.RESISTOR	10K 1/16W
R958	NRVA63D-332	M.F.RESISTOR	3.3K 1/16W
R959	NRVA63D-683	M.F.RESISTOR	68K 1/16W
R960	NRVA63D-101	M.F.RESISTOR	100 1/16W
R961	NRVA63D-682	M.F.RESISTOR	6.8K 1/16W
R962	NRVA63D-223	M.F.RESISTOR	22K 1/16W
R963	NRVA63D-123	M.F.RESISTOR	12K 1/16W
R964	NRVA63D-273	M.F.RESISTOR	27K 1/16W
R965	NRVA63D-101	M.F.RESISTOR	100 1/16W
R971	NRVA63D-393	M.F.RESISTOR	39K 1/16W
R972	NRVA63D-333	M.F.RESISTOR	33K 1/16W
R973	NRVA63D-393	M.F.RESISTOR	39K 1/16W
R974	NRVA63D-333	M.F.RESISTOR	33K 1/16W
R975	NRVA63D-393	M.F.RESISTOR	39K 1/16W
R976	NRVA63D-333	M.F.RESISTOR	33K 1/16W
R977	NRVA63D-223	M.F.RESISTOR	22K 1/16W
R979	NRVA63D-103	M.F.RESISTOR	10K 1/16W
R980	NRVA63D-104	M.F.RESISTOR	100K 1/16W
R981	NRVA63D-123	M.F.RESISTOR	12K 1/16W
R982	NRVA63D-223	M.F.RESISTOR	22K 1/16W
R983	NRVA63D-124	M.F.RESISTOR	120K 1/16W
R984	NRVA63D-101	M.F.RESISTOR	100 1/16W
R985	NRVA63D-103	M.F.RESISTOR	10K 1/16W
R986	NRVA63D-123	M.F.RESISTOR	12K 1/16W
R987	NRVA63D-103	M.F.RESISTOR	10K 1/16W
R988	NRVA63D-103	M.F.RESISTOR	10K 1/16W
R989	NRVA63D-101	M.F.RESISTOR	100 1/16W

5.9 IF BOARD ASSEMBLY LIST 09

SCK2442-02-00A

0900000000

Symbol No.	Part No.	Part Name	Description	
R994	NRVA63D-223	M.F.RESISTOR	22K	1/16W
R995	NRVA63D-223	M.F.RESISTOR	22K	1/16W
R996	NRVA63D-123	M.F.RESISTOR	12K	1/16W
R997	NRVA63D-823	M.F.RESISTOR	82K	1/16W
VR1	NVP1314-104	TRIM.RESISTOR	100K	CP B
VR2	NVP1314-104	TRIM.RESISTOR	100K	CP R
C931	NCT06CH-151	CER.CAPACITOR	150P	50V
C932	NCT06CH-181	CER.CAPACITOR	180P	50V
C933	NCB31CK-473	CER.CAPACITOR	0.047	16V
C934	NFV41CJ-473	F.CAPACITOR	0.047	16V
C935	NCB31CK-473	CER.CAPACITOR	0.047	16V
C936	NFV41CJ-473	F.CAPACITOR	0.047	16V
C941	NEE51AM-476	TAN.CAPACITOR	47	10V
C942	NEE51AM-476	TAN.CAPACITOR	47	10V
C945	NCB31CK-473	CER.CAPACITOR	0.047	16V
C946	NCB31CK-473	CER.CAPACITOR	0.047	16V
C947	NCB31CK-473	CER.CAPACITOR	0.047	16V
C948	NCB31CK-473	CER.CAPACITOR	0.047	16V
C949	NCB31CK-473	CER.CAPACITOR	0.047	16V
C950	NCB31CK-473	CER.CAPACITOR	0.047	16V
C951	NCB31CK-473	CER.CAPACITOR	0.047	16V
C952	NCB31CK-473	CER.CAPACITOR	0.047	16V
C953	NCB31CK-473	CER.CAPACITOR	0.047	16V
C954	NCB31CK-473	CER.CAPACITOR	0.047	16V
C955	NCB31CK-473	CER.CAPACITOR	0.047	16V
C956	NCB31CK-473	CER.CAPACITOR	0.047	16V
C957	NCB31CK-473	CER.CAPACITOR	0.047	16V
C958	NCB31CK-473	CER.CAPACITOR	0.047	16V
C959	NCB31CK-473	CER.CAPACITOR	0.047	16V
C960	NCB31CK-473	CER.CAPACITOR	0.047	16V
C961	NCB31CK-473	CER.CAPACITOR	0.047	16V
C963	NCB31CK-473	CER.CAPACITOR	0.047	16V
C964	NCB31CK-473	CER.CAPACITOR	0.047	16V
C965	NCB31CK-473	CER.CAPACITOR	0.047	16V
C966	NCB31CK-473	CER.CAPACITOR	0.047	16V
C967	NCB31CK-473	CER.CAPACITOR	0.047	16V
C968	NCB31CK-473	CER.CAPACITOR	0.047	16V
C970	NCT06CH-181	CER.CAPACITOR	180P	50V
L902	SCV1950-4R7	PEAKING COIL	4.7μH	
CN9	CHB102W-24R	CONNECTOR	24-PIN	
CN10	CHB102W-14R	CONNECTOR	14-PIN	
TP911	SCV1880-001	TEST POINT	W.PEAK	
TP912	SCV1880-001	TEST POINT	W.APL	
TP913	SCV1880-001	TEST POINT	I.PEAK	
TP914	SCV1880-001	TEST POINT	I.APL	

Symbol No.	Part No.	Part Name	Description	
IC311	MC74HC165F	I.C.(M)	MOTOROLA	
D301	MA143A	DIODE	MATSUSHITA	
D302	MA143A	DIODE	MATSUSHITA	
D303	MA143A	DIODE	MATSUSHITA	
D304	MA143A	DIODE	MATSUSHITA	
D305	MA143A	DIODE	MATSUSHITA	
D306	MA143A	DIODE	MATSUSHITA	
D307	MA143A	DIODE	MATSUSHITA	
D308	MA143A	DIODE	MATSUSHITA	
D309	MA143A	DIODE	MATSUSHITA	
D310	MA143A	DIODE	MATSUSHITA	
D311	MA143A	DIODE	MATSUSHITA	
D312	MA143A	DIODE	MATSUSHITA	
LD301	GL3EG44	LED	SHARP	
LD302	GL3HS44	LED	SHARP	
R311	NRVA63D-471	M.F.RESISTOR	470	1/16W
R312	NRVA63D-473	M.F.RESISTOR	47K	1/16W
R313	NRVA63D-473	M.F.RESISTOR	47K	1/16W
R314	NRVA63D-473	M.F.RESISTOR	47K	1/16W
R315	NRVA63D-473	M.F.RESISTOR	47K	1/16W
R316	NRVA63D-473	M.F.RESISTOR	47K	1/16W
R317	NRVA63D-473	M.F.RESISTOR	47K	1/16W
R318	NRVA63D-473	M.F.RESISTOR	47K	1/16W
R319	NRVA63D-473	M.F.RESISTOR	47K	1/16W
R320	NRVA63D-473	M.F.RESISTOR	47K	1/16W
R321	NRVA63D-680	M.F.RESISTOR	68	1/16W
R322	NRVA63D-680	M.F.RESISTOR	68	1/16W
R323	NRVA63D-680	M.F.RESISTOR	68	1/16W
R324	NRVA63D-121	M.F.RESISTOR	120	1/16W
R325	NRVA63D-750	M.F.RESISTOR	75	1/16W
R326	NRVA63D-332	M.F.RESISTOR	3.3K	1/16W
R327	NRVA63D-332	M.F.RESISTOR	3.3K	1/16W
R328	NRVA63D-332	M.F.RESISTOR	3.3K	1/16W
R329	NRVA63D-471	M.F.RESISTOR	470	1/16W
R330	NRVA63D-471	M.F.RESISTOR	470	1/16W
R331	NRVA63D-471	M.F.RESISTOR	470	1/16W
R332	NRVA63D-471	M.F.RESISTOR	470	1/16W
R333	NRSA63J-681	M.G.RESISTOR	680	1/16W
R334	NRSA63J-681	M.G.RESISTOR	680	1/16W
R335	NRSA63J-151	M.G.RESISTOR	150	1/16W
R336	NRVA63D-103	M.F.RESISTOR	10K	1/16W
R337	NRVA63D-750	M.F.RESISTOR	75	1/16W
R338	NRVA63D-222	M.F.RESISTOR	2.2K	1/16W
R339	NRVA63D-222	M.F.RESISTOR	2.2K	1/16W
R340	NRSA63J-151	M.G.RESISTOR	150	1/16W
R343	NRVA63D-151	M.F.RESISTOR	150	1/16W
C321	NCB21EK-473	CER.CAPACITOR	0.047	25V
C322	NCB21EK-473	CER.CAPACITOR	0.047	25V
C323	NCB21EK-473	CER.CAPACITOR	0.047	25V
C324	NEE51AM-476	TAN.CAPACITOR	47	10V
L301	SCV2732-2HM471	FERAITE BEAD		

[IF]

5.10 MT BOARD ASSEMBLY LIST 10

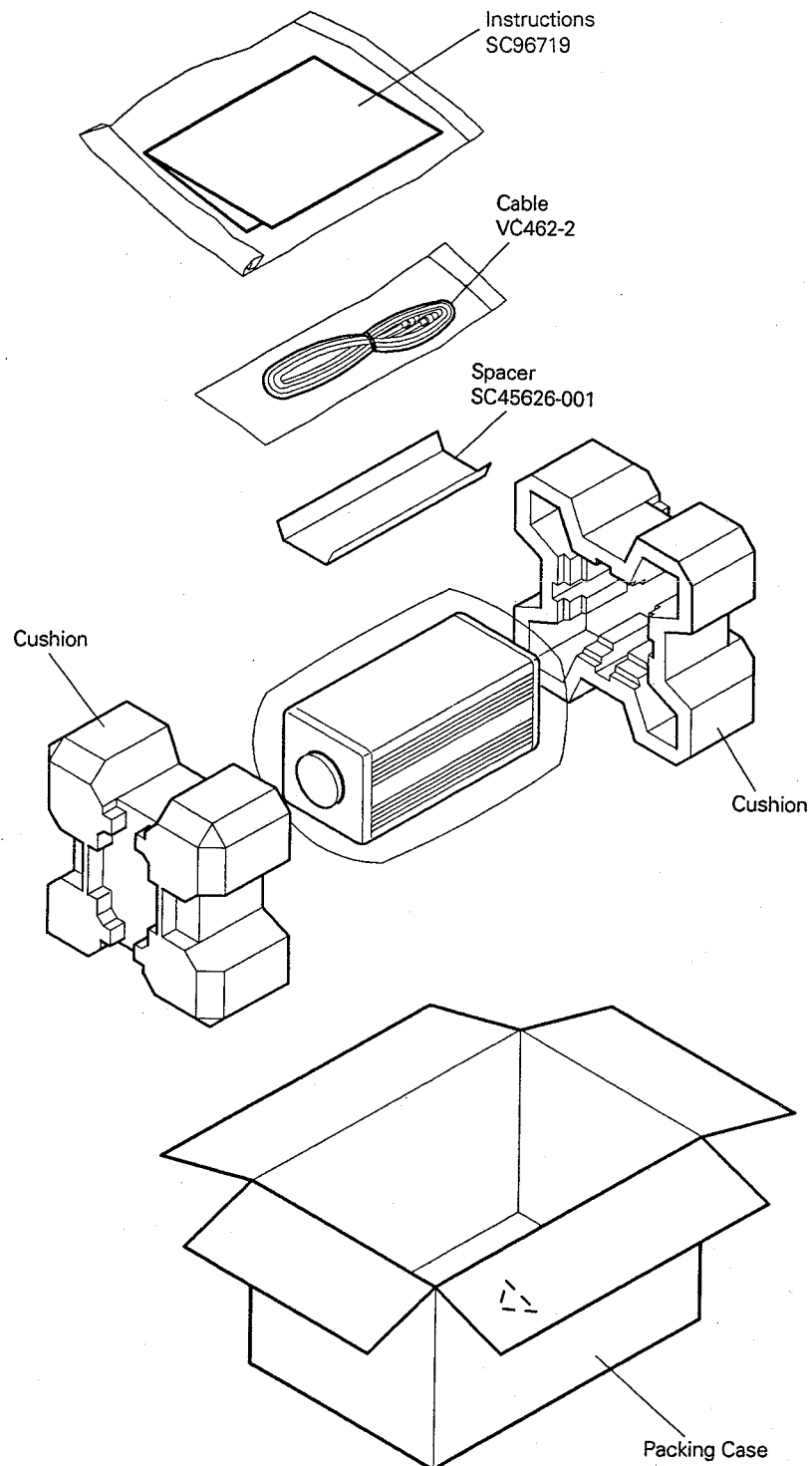
SCK2442-01-00A

10

Symbol No.	Part No.	Part Name	Description
L302	SCV2732-2HM471	FERAITE BEAD	
L303	SCV2732-2HM471	FERAITE BEAD	
L304	SCV2732-2HM471	FERAITE BEAD	
L305	SCV2732-2HM471	FERAITE BEAD	
L306	SCV2732-2HM471	FERAITE BEAD	
L307	SCV2732-2HM471	FERAITE BEAD	
L308	SCV2732-2HM471	FERAITE BEAD	
L309	SCV2732-2HM471	FERAITE BEAD	
L310	SCV2732-2HM471	FERAITE BEAD	
LC311	EXC-CET471U	EMI FILTER	
LC312	EXC-CET471U	EMI FILTER	
S301	SCV2679-001	TACT SWITCH	MENU
S302	SCV2679-001	TACT SWITCH	ITEM(-)
S303	SCV2679-001	TACT SWITCH	ITEM(+)
S304	SCV2679-001	TACT SWITCH	DATA(-)
S305	SCV2679-001	TACT SWITCH	DATA(+)
S306	SCV2680-001	TACT SWITCH	RESET
S307	SCV2169-001	SLIDE SWITCH	RGB/YC/COMPO
CN11	SSV2614-20	FFC CONNECTOR	20-PIN
CN12	SSV2614-20	FFC CONNECTOR	20-PIN

Symbol No.	Part No.	Part Name	Description
IC301	TA7809F	I.C.(M)	TOSHIBA
IC302	NJM78L09UA	I.C.(M)	JRC
R301	NRSA63J-100	M.G.RESISTOR	10 1/16W
R302	NRSA63J-100	M.G.RESISTOR	10 1/16W
R303	NRSA63J-100	M.G.RESISTOR	10 1/16W
C301	NEA11EM-336	E.CAPACITOR	33 25V
C302	NEA11EM-336	E.CAPACITOR	33 25V
C303	NEA11EM-336	E.CAPACITOR	33 25V
C304	NEF11VM-105	TAN.CAPACITOR	1.0 35V
C305	NEF11CM-335	TAN.CAPACITOR	3.3 16V
C306	NEF11CM-335	TAN.CAPACITOR	3.3 16V
C307	NEF11AM-475	TAN.CAPACITOR	4.7 10V
C308	NEF11AM-475	TAN.CAPACITOR	4.7 10V
C309	NEF11VM-105	TAN.CAPACITOR	1.0 35V
C310	NEF11VM-105	TAN.CAPACITOR	1.0 35V
C311	NEA11AM-336	E.CAPACITOR	33 10V
LC301	SCV1804-222	EMI FILTER	
LC302	SCV1804-222	EMI FILTER	
LC303	SCV1804-222	EMI FILTER	
LC304	SCV1804-222	EMI FILTER	
LC305	SCV1804-222	EMI FILTER	
CN1	SSV1983-024W	CONNECTOR	24-PIN
CN2	SSV1983-024W	CONNECTOR	24-PIN
CN3	CHB102W-24P	CONNECTOR	24-PIN
CN4	CHB102W-14P	CONNECTOR	14-PIN
CN5	CHB102W-24P	CONNECTOR	24-PIN
CN6	CHB102W-14P	CONNECTOR	14-PIN
CN7	CHB102W-24P	CONNECTOR	24-PIN
CN8	CHB102W-14P	CONNECTOR	14-PIN
CN9	CHB102W-24P	CONNECTOR	24-PIN
CN10	CHB102W-14P	CONNECTOR	14-PIN
CN11	SSV1983-020	CONNECTOR	20-PIN
CN12	SSV1983-020	CONNECTOR	20-PIN

SECTION 6 REPACKING



Note: Accessories above are subject to change without notice.